CIVIL FUNCTIONS, DEPARTMENT OF THE ARMY APPROPRIATIONS FOR 1955

HEARINGS

BEFORE THE

SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS HOUSE OF REPRESENTATIVES

EIGHTY-THIRD CONGRESS

SECOND SESSION

UNIV. OF MICH.
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SUBCOMMITTEE ON CIVIL FUNCTIONS AND MILITARY CONSTRUCTION

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FRANK SANDERS, *Executive Secretary to Subcommittee*

PART 1

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CIVIL FUNCTIONS, DEPARTMENT OF THE ARMY APPROPRIATIONS FOR 1955

THURSDAY, JANUARY 14, 1954.

CEMETERIAL EXPENSES

WITNESSES

MAJ. GEN. K. L. HASTINGS, THE ACTING THE QUARTERMASTER GENERAL
BRIG. GEN. A. B. DENNISTON, QMC COMPTROLLER
COL. JOHN D. MARTZ, JR., CHIEF, MEMORIAL DIVISION
COL. WALTER P. SCOGGINS, ASSISTANT TO THE CHIEF, MEMORIAL DIVISION
CHARLES J. DORMAN, CHIEF, OPERATIONS AND REQUIREMENTS SECTION, CEMETERY BRANCH
LT. COL. JAMES F. WATT, CHIEF, CEMETERY BRANCH
LT. COL. JAMES W. GERARD, CHIEF, HEADSTONE BRANCH

Amounts available for obligation

	1953 actual	1954 estimate	1955 estimate
Appropriation or estimate	$4,160,000	$5,107,000	$5,635,000
Reimbursements from other accounts	3,586		
Total available for obligation	4,163,586	5,107,000	5,635,000
Unobligated balance, estimated savings	−37,537		
Obligations incurred	4,126,049	5,107,000	5,635,000

Obligations by activities

Description	1953 actual	1954 estimat	1955 estimate
1. Procurement of headstones	$1,273,338	$2,127,000	$2,124,000
2. Construction and acquisition of land	79,691	200,000	530,000
3. Maintenance and operation	2,277,804	2,290,000	2,491,000
4. Administration	495,216	490,000	490,000
Obligations incurred	4,126,049	5,107,000	5,635,000

Obligations by objects

Object classification	1953 actual	1954 estimate	1955 estimate
Total number of permanent positions	660	660	684
Full-time equivalent of all other positions	39	34	39
Average number of all employees	625	615	651
Average salaries and grades:			
General schedule grades:			
Average salary	$4,028	$4,015	$4,018
Average grade	GS-5.6	GS-5.5	GS-5.5
Crafts, protective, and custodial grades:			
Average salary	$3,054	$3,062	$3,092
Average grade	CPC-3.8	CPC-4.0	CPC-4.0
Ungraded positions: Average salary	$3,049	$3,337	$3,337
01 Personal services:			
Permanent positions	$2,023,643	$2,100,472	$2,205,568
Other positions	101,134	88,400	101,400
Regular pay in excess of 52-week base	7,783	8,078	8,483
Payment above basic rates	30,007	15,226	23,160
Total personal services	2,162,567	2,212,176	2,338,611
02 Travel	21,959	23,000	22,500
03 Transportation of things	250,657	374,958	375,836
04 Communication services	30,700	31,100	35,500
05 Rents and utility services	50,413	52,500	53,500
07 Other contractual services	304,252	296,300	308,600
08 Supplies and materials	146,553	145,000	148,000
09 Equipment	1,103,219	1,796,142	1,836,564
10 Lands and structures	78,216	198,000	528,500
15 Taxes and assessments	18,180	18,491	28,056
Subtotal	4,166,716	5,147,667	5,675,667
Deduct charges for quarters and subsistence	40,667	40,667	40,667
Obligations incurred	4,126,049	5,107,000	5,635,000

Analysis of expenditures

	1953 actual	1954 estimate	1955 estimate
Unliquidated obligations, start of year	$816,987	$423,380	$575,799
Obligations incurred during the year	4,126,049	5,107,000	5,635,000
Total	4,943,036	5,530,380	6,210,799
Deduct:			
Adjustment in obligations of prior years	62,956	4,581	----------
Reimbursements	3,586	----------	----------
Obligated balance carried to certified claims account	5,505	----------	----------
Unliquidated obligations, end of year	423,380	575,799	1,510,799
Total expenditures	4,447,609	4,950,000	4,700,000
Expenditures are distributed as follows:			
Out of current authorizations	3,760,291	4,615,000	4,270,000
Out of prior authorizations	687,318	335,000	430,000

Mr. DAVIS. We will open the hearings on the Army civil functions appropriation bill for the 1955 fiscal year with the presentation of the request for the cemeterial expenses of the Department of the Army.

We are unhappy to learn that General Horkan is absent for very unpleasant reasons.

General HASTINGS. Yes, sir.

Mr. DAVIS. But we are very happy to have with us General Hastings, and without further preliminary we will ask you to proceed with the general presentation of this matter, General.

General HASTINGS. Thank you, Mr. Chairman and members of the committee.

General Statement

I wish to present to you general information pertaining to the appropriation "Cemeterial expenses, Department of the Army" for the fiscal year 1955.

The Congress has by statute charged the Army with responsibility for the procurement and distribution of headstones for various categories of authorized personnel who are interred in private, national, or post cemeteries. The Army similarly is charged with responsibility for the maintenance and operation at the present time of 82 national cemeteries in the United States; 3 national cemeteries in overseas possessions; 24 soldiers' lots; 7 Confederate cemeteries or plots; 4 national monuments, and 1 memorial park. This appropriation covers funds for the procurement and distribution of headstones as well as for expenses incident to the maintenance and operation of the indicated cemeterial facilities.

The estimate for the fiscal year 1955 amounts to $5,635,000 as compared to $5,107,000 appropriated for the fiscal year 1954, representing an increase of $528,000. However, this increase will only provide for essential services and it will still not be possible to reach the standard of care and maintenance of our national cemeteries that is desired.

The scope of operations under this appropriation is constantly expanding in order to keep pace with the steadily increasing burial requirements of our veteran population. An increasing number of interments must be handled, and enlarged burial areas maintained. In addition, there is a greater requirement for headstones.

The estimate of funds required for the procurement of headstones amounts to $2,124,000 as compared with $2,127,000 estimated to be obligated in the fiscal year 1954. The anticipated number of applications to be received in the fiscal year 1955 is 87,340 which is 4,095 more than the number estimated for 1954. However, a decrease in the carryover of unfilled applications into 1955 permits a small reduction in funds requested for this item.

The amount of $530,000 included for construction represents a net increase of $330,000 over fiscal year 1954. This increase is required to develop additional grave sites in the Beverly, N. J., Fort Logan, Colo., and Willamette, Oreg., national cemeteries which will be needed to meet burial requirements. The amount requested will also provide for extension of roads and drainage facilities in burial areas in the Long Island National Cemetery, N. Y., and will permit essential repairs to the water supply system in the Golden Gate, Calif., Cemetery. In addition, it will provide necessary repairs to the foundation walls of the cemetery lodge at San Francisco National Cemetery; and will provide for minimum essential engineering investigations, planning, and cost estimates preliminary to future construction to meet increasing burial requirements.

The estimate of $655,000 for maintenance and operation of the national cemeteries represents an increase of $65,000 over fiscal year 1954. This requirement provides for utilities services, contractual services, communication services, supplies and equipment, and transportation. The increase indicated will provide for the cost of operations incident to increased interment activity, for additional

maintenance of operational equipment, and for replacement of deteriorated equipment not economically repairable.

The request of $1,836,000 for field personnel includes an increase of $136,000 over the amount for this purpose in the fiscal year 1954. This is expected to provide 36 man-years over the total of 500 man-years anticipated in 1954. This increase will provide labor for approximately 2,447 additional interments expected in the fiscal year 1955, an increase of 12 percent over the 20,363 interments provided for in the fiscal year 1954. It will also allow for the reestablishment of a maintenance level to approximately that attained in fiscal year 1953, which is not being attained in the current year due to lack of necessary funds.

The estimate for salaries at the seat of government amounts to $490,000, which is the same amount as for the fiscal year 1954. These funds are to provide a staff in the Office of the Quartermaster General for coordination, technical and staff supervision of all activities involved in the establishment, development, maintenance, operation, and administration of the national cemetery installations under the jurisdiction of the Department of the Army; the determination of eligibility for interment; the maintenance of permanent records of approximately 650,000 interments in the cemeteries; and furnishing headstones and markers for the graves of former members of the Armed Forces and other authorized personnel.

I wish to assure you that every effort is being and will continue to be directed toward providing the best possible care and operation of our national cemeteries within the funds made available for this purpose. As I have earlier indicated, a higher standard of care and maintenance is desirable but in the interest of economy the estimate provides only for the minimum essential maintenance and care of our cemeteries.

Colonel Martz, Chief of the Memorial Division, replaces Colonel Clearwater. Colonel Martz arrived back from the Far East Command, where, for the last 2 years, he has been heading up our graves registration.

Mr. DAVIS. We are happy to have you with us, Colonel Martz. I think your statement, General, is a very satisfactory one, so far as this committee is concerned, and your approach seems to be in accordance with the indications of the committee in its report last year, and further in accordance with the general approach the members of the committee have had with respect to this program.

DETERMINATION OF BURIAL RIGHTS OF VETERANS

First of all, tell us what determines the scope of this program; what are the burial rights of the veteran?

Colonel MARTZ. The burial rights of a veteran, as set forth in the public laws under which we now operate, provide the rights to every member, to every individual, who has had service in the armed services, and who has had an honorable discharge from the military service.

It also provides the incidental rights of burying his spouse, provided the spouse is buried adjacent to the veteran himself, and in certain cases the minor children of the veteran or the member of the Armed Forces.

And there is also included the fact that the individual who prefers burial in a private cemetery, does have the right under our headstone law, to obtain a proper marker at Government expense, for erection not at Government expense in the private cemetery.

Mr. DAVIS. Is there any limitation with respect to that right as to the cost and other items?

Colonel MARTZ. There is no statutory limitation on costs, other than the fact that the Army in operating the program has taken every possible means to establish the lowest possible cost of this service which the Government is furnishing.

Mr. DAVIS. You are the one who decides the kind of marker that shall be furnished.

In other words, there is no discretion on the part of the applicant who desires it?

Colonel MARTZ. That is correct, in that the applicant is limited to the several types which we have adopted as standard.

Mr. DAVIS. That just applies to veterans who have met the military requirements, or is there any limitation as to the time they have been in the service?

Colonel MARTZ. No. Any individual who has been an active member of the Armed Forces and has an honorable discharge is eligible.

Mr. DAVIS. You have indicated, General Hastings, that you had made considerable progress in cutting down on the huge backlog that you mentioned last year. You stated you anticipated a decrease in the carryover of unfilled applications. Can you tell us what your progress has been in that respect?

Colonel MARTZ. Yes. The detail is set forth on page 7 of the justifications, which sets forth those figures for the fiscal years 1953, 1954, and 1955.

Insofar as the carryover at the beginning of the fiscal year 1954 was concerned, we had 39,829 applications pending as of June 30, 1953.

Due to the appropriation made available for the fiscal year 1954 and considering our anticipation of new receipts of applications during the fiscal year 1954, we have estimated that we will have a carryover of 21,448 applications at the end of June 30, 1954, a considerable decrease from the carryover from the previous year.

PROCUREMENT OF HEADSTONES

Mr. DAVIS. We will insert in the record at this point pages 7 and 9 of the justification.

(The statements referred to follow:)

Justification of estimates

	Fiscal year 1953	Fiscal year 1954	Fiscal year 1955
Applications brought forward from previous year:			
(a) Due to normal processing time	11,739	5,746	6,937
(b) Due to insufficient funds	11,221	34,083	14,511
	22,960	39,829	21,448
Normal receipt of applications	75,116	78,120	81,240
Applications other than normal receipts:			
(a) For Korean requirements	7,041	4,125	5,100
(b) For group burials	353	0	0
(c) For replacement	716	1,000	1,000
	8,110	5,125	6,100
Total, applications for headstones	106,186	123,074	108,788
Deduction to determine purchase requirements:			
(a) Carried forward due to normal processing time	5,746	6,937	7,278
(b) Carried forward due to insufficient funds	34,083	14,511	0
	39,829	21,448	7,278
Headstone and markers to be purchased	66,357	101,626	101,510

Summary	Headstones	Cost each	Amount
General (marble upright)	33,113	$18.65	$617,558
Civil and Spanish (marble upright)	1,494	19.32	28,864
Confederate (marble upright)	122	18.90	2,306
Flat marble	11,719	14.03	164,418
Flat granite 4-inch	42,546	15.95	678,609
Flat granite 3-inch	1,398	15.89	22,214
Bronze marker	11,118	21.82	242,595
Total	101,510		1,756,564

HEADSTONE REQUIREMENTS

Mr. DAVIS. You spoke in your statement of the increase in the headstone requirements. What is the reason for that increase?

Colonel MARTZ. The basic increase for those requirements, as indicated again on page 7, where our average receipt of normal applications has been going up from 75,116 in 1953, to 78,120 in 1954, and an estimated 81,240 in 1955, is due to the increased number of veterans who are entitled to this service.

We must also remember that the World War I veterans are reaching the age where the rate of death is increasing. We are finding also, as the large number of personnel in the present Armed Forces is rapidly turning over, we are getting an increased number of veterans eligible for this right under the public laws, and we anticipate it will continue to increase as the veterans reach the age where death may be expected in accordance with the normal actuary tables.

METHOD OF PROCURING HEADSTONES

Mr. DAVIS. How do you handle the procurement of headstones?

Colonel MARTZ. The procurement of headstones is handled by the use of competitive bids. Last April we submitted invitations for bids for requirements for the present fiscal year to 129 prospective suppliers who are located in 26 different States of the Union. Copies of those invitations were distributed and displayed in public places and made available through trade journals.

From the 129 invitations issued, 19 proposals were received. These bids were opened on May 21, 1953. Awards were made in accordance with the regulations and policies prescribed by the Armed Forces procurement regulations, and in accordance with Army procurement procedures, that is, to the lowest responsible bidder.

Some of the factors were: Was the potential supplier financially and otherwise able to perform the contract? Was he otherwise qualified and eligible by law and under procurement regulations? We took into consideration his judgment, his skill and his integrity. Consideration was given to the foreseeable costs or delay to the Government resulting from inspection, shipping, and location of supplies; we also considered the matter of satisfactory delivery date, discounts offered, and cost of the transportation from the area where the various bidders were located.

I might clarify this procedure, by giving a brief example of how we awarded our bids for the bronze markers which are now being procured during this current year.

It was estimated that 11,193 bronze markers, based on experience from previous years, would be requested for our veteran population during the fiscal year 1954.

We received 11 bids, as a result of the invitations sent out. The proposal of the Acme Bronze Co. of Maple, Ill., was the lowest, with the price of $20 each, but they limited their delivery to 5,400 for the year.

The Wellman Products Co. of Cleveland, was the next lowest bidder, with a price of $23.50, but limited their delivery to 1,800 for the year.

The third lowest bidder was M. Greenbergs & Sons of San Francisco, Calif., with a price of $24.14.

Due to the fact that the delivery capabilities of both the low bidder and the second low bidder were not sufficient to meet our requirements, we awarded contracts to the three lowest bidders in order to obtain the necessary quantity of markers which we intended to procure.

These contracts are open-end contracts against which we submit, usually on a weekly basis, our request for markers for manufacture and delivery from the respective contractors.

I might point out that in evaluating the bids and making determination of these awards, consideration was given to both the unit price of the markers and the transportation cost to the point of destination. Due to the fact that the destination is an unknown factor, and that approximately 77 percent of our markers are furnished for erection in private cemeteries, we used the capitals of the 48 States as the focal destination points for estimating transportation costs.

The Chief of Transportation of the Army supplied rates to these given points for parcel post, insofar as bronze markers are concerned, and for freight, in the case of the granite or marble headstones.

These transportation rates were added to the unit price of the item from each responsible bidder, and upon that basis we determined which could furnish our services at the lowest overall cost to the Government.

OPEN-END CONTRACTS

Mr. DAVIS. You spoke of them as being open-end contracts. For how long?

Colonel MARTZ. For 1 year.

Mr. DAVIS. For 1 year.

Colonel MARTZ. Yes.

Mr. DAVIS. When you get responsible contractors into production satisfactory to you, would not probably a long-term contract be of financial advantage to the Government, that is, to let a contract for a longer period of time than 1 year?

Colonel MARTZ. We have found in our experience in the past, that due to the fact that we obtain our appropriation on a year-to-year basis, we did not feel it proper to enter into contracts for a greater potential production of the manufacture than we had funds actually available for that year.

Mr. DAVIS. Well, generally that appears to be a sound policy, but where you do have open-end contracts of this kind, and where you can let them know what you are going to need from time to time, it would seem to have an advantage of fixing the price per unit. Then if you did not have the money, or did not see fit to order any for the subsequent year, you would not be subject to any liability by reason of the fact that you have a longer contract, would you?

Colonel MARTZ. Probably not. I would like to mention, though, that the bronze markers, for example, have a fluctuating price. In the past year the price dropped from $23.21 to $21.82, which was a saving to the Government. We have found that the contractor's price, of course, would vary both ways. Also, the price has crept up in accordance with the national economy. But I feel we would have difficulty with some of our contractors wanting to commit themselves for a longer period than 1 year at any 1 time, due to the fact that the contractor is unable to project his production cost that far into the future.

BRONZE MARKER USE

Mr. DAVIS. You spoke of the use of bronze markers. To what extent are they using them, and what is the advantage if any of their use?

Colonel MARTZ. The bronze markers are not used in the national cemetery system. We went to their use some years back in response to the demands from the next of kin of veterans who were being buried in private cemeteries of the memorial park type, where their own cemetery regulations permitted the installation of bronze markers.

In order to meet the demand from some of the veterans, and due to the fact that they were entitled to reasonable service, we adopted the bronze marker for use in that type of cemetery. In other words, the applicant in each case may ask for a plain bronze marker, or he

may ask for a flat granite marker, or he may ask for a flat marble marker for use in some cemeteries. Or he may ask for a marble upright marker. In other words, he has the choice, within the type of the markers which we have standardized insofar as the types are concerned.

Mr. DAVIS. Has there been any noticeable increase in the requests for that type of marker in the last few years?

Colonel MARTZ. Yes, there has been an increase in the last few years.

Mr. DAVIS. Are you giving consideration to their use in national cemeteries, or is that in your contemplation?

Colonel MARTZ. We have not considered the use of bronze markers in national cemeteries, due to the fact that they are a little more expensive than the marble and granite types. We have, in several of the national cemeteries adopted the flat type of marker, but have restricted them to the granite.

Mr. DAVIS. Is there any problem of getting them now, I mean, due to what you might call a shortage of bronze?

Colonel MARTZ. No; there has been no difficulty in that respect.

CONSTRUCTION AND ACQUISITION OF LAND

ACREAGE OF NATIONAL CEMETERIES

Mr. DAVIS. You indicate a rather substantial increase for construction and acquisition of land. In last year's hearing the committee was supplied with a table showing the total acreage at each national cemetery, the developed acreage, and the percentage of developed acreage at the end of the calendar year 1952. Do you have figures compiled that would bring that information up to date, to December 31, 1953?

Colonel MARTZ. We do not have that information with us this morning, but we will be very happy to furnish it to the committee.

Mr. DAVIS. If you will be good enough to do that, we will appreciate it.

(The matter referred to follows:)

Data on national cemeteries, fiscal year 1955 budget

Cemetery	Total acres	Developed acres	Percent developed acres filled Dec. 31, 1953	Additional acreage being requested, fiscal year 1955 budget[1]
First Army area:				
Beverly, N. J.	64.55	27.7	76	
Cypress Hills, N. Y.	18.195	18.195	100	
Finn's Point, N. J.	4.59	4.59	100	
Long Island, N. Y.	364.00	124.82	58	
Woodlawn, N. Y.	7.624	7.624	76	
Second Army area:				
Annapolis, Md.	4.125	4.125	98	
Balls Bluff, Va.	4.63	4.63	100	
Baltimore, Md.	72.227	61.227	44	
Camp Nelson, Ky.	9.75	9.75	89	
Cave Hill, Ky.	4.108	4.108	100	
City Point, Va.	6.66	6.66	88	
Cold Harbor, Va.	1.43	1.43	100	
Culpepper, Va.	6.47	6.47	71	
Danville, Ky.	.31	.31	100	
Danville, Va.	3.50	3.50	86	
Fort Harrison, Va.	1.55	1.55	81	

[1] None requested fiscal year 1955r

Data on national cemeteries, fiscal year 1955 budget—Continued

Cemetery	Total acres	Developed acres	Percent developed acres filled Dec. 31, 1953	Additional acreage being requested, fiscal year 1955 budget[1]
Second Army area—Continued				
Glendale, Va	2.12	2.12	80	
Grafton, W. Va	3.21	3.21	97	
Hampton, Va	26.53	26.53	80	
Lebanon, Ky	2.83	2.83	71	
Lexington, Ky	.75	.75	100	
Loudon Park, Md	5.60	5.60	92	
Mill Springs, Ky	3.50	3.50	61	
Perryville, Ky	4.39	4.39	0	
Philadelphia, Pa	13.32	13.32	98	
Richmond, Va	9.74	9.74	84	
Seven Pines, Va	1.90	1.90	88	
Staunton, Va	1.15	1.15	90	
Winchester, Va	4.89	4.89	90	
Zachary Taylor, Ky	16.43	16.43	80	
Third Army area:				
Andersonville, Ga	[2] 201.26	27.15	71	
Barrancas, Fla	29.91	10.52	83	
Beaufort, S. C	28.92	28.92	68	
Chattanooga, Tenn	122.12	75.00	91	
Corinth, Miss	20.00	20.00	54	
Florence, S. C	5.87	5.87	74	
Knoxville, Tenn	9.83	9.83	82	
Marietta, Ga	23.256	23.256	92	
Memphis, Tenn	44.15	44.15	87	
Mobile, Ala	4.83	4.83	75	
Nashville, Tenn	65.00	65.00	85	
Natchez, Miss	10.72	10.72	87	
New Bern, N. C	7.68	7.68	58	
Raleigh, N. C	6.953	6.953	59	
Salisbury, N. C	6.33	6.33	76	
St. Augustine, Fla	1.36	1.36	100	
Wilmington, N. C	5.00	5.00	86	
Fourth Army area:				
Alexandria, La	8.23	8.23	64	
Baton Rouge, La	7.50	7.50	94	
Fayetteville, Ark	6.00	6.00	72	
Fort Bliss, Tex	59.86	34.86	49	
Fort Gibson, Okla	32.21	8.51	77	
Fort Sam Houston, Tex	60.11	40.51	63	
Fort Smith, Ark	15.83	15.83	63	
Little Rock, Ark	24.91	24.91	63	
Port Hudson, La	8.03	8.03	57	
San Antonio, Tex	3.63	3.63	87	
Santa Fe, N. Mex	34.76	9.63	75	
Fifth Army area:				
Alton, Ill	.48	.48	62	
Black Hills, S. Dak	105.90	6.40	69	
Camp Butler, Ill	39.25	13.42	82	
Crown Hill, Ind	1.37	1.37	100	
Fort Leavenworth, Kans	35.95	14.44	90	
Fort Logan, Colo	160.00	3.20	52	
Fort McPherson, Nebr	20.00	14.00	69	
Fort Scott, Kans	10.59	10.59	56	
Fort Snelling, Minn	178.56	72.00	65	
Jefferson Barracks, Mo	194.98	41.33	83	
Jefferson City, Mo	2.01	2.01	79	
Keokuk, Iowa	20.20	4.20	89	
Mound City, Ill	10.50	10.50	95	
New Albany, Ind	6.31	6.31	89	
Quincy, Ill	.45	.45	57	
Rock Island, Ill	27.50	9.39	70	
Springfield, Ill	13.825	10.245	87	
Sixth Army area:				
Fort Rosecrans, Calif	28.59	28.59	76	
Golden Gate, Calif	161.547	119.00	75	
San Francisco, Calif	28.00	28.00	97	
Willamette, Oreg	201.45	10.00	60	
Military District of Washington:				
Alexandria, Va	5.50	4.00	81	
Arlington, Va	420.23	310.89	78	
Soldiers' Home, D. C	15.80	15.80	77	
Sitka, Alaska	1.19	1.19	82	
Puerto Rico	106.28	21.50	72	
National Memorial Cemetery of Pacific	112.00	112.00	87	

[1] None requested fiscal year 1955.
[2] Includes 84.20 total acres in Prison Park.

SUMMARY JUSTIFICATION DATA

Mr. DAVIS. We will insert in the record at this point pages 10, 11, and 12 of the justification. These pages deal with the request for the construction and the acquisition of land.

(The statements referred to follows):

Justification of Estimates

Summary	Actual obligations, fiscal year 1953	Estimated obligations, fiscal year 1954	Estimate, fiscal year 1955
(1)	(2)	(3)	(4)
Total	($79,691)	($200,000)	($530,000)
Zone of the Interior	79,691	200,000	530,000

SUPPORTING DATA

Funds are requested under this item only to the extent that it is considered necessary:

(*a*) To provide grave space and facilities for the interment of the remains of the classes of persons enumerated in Public Law 526, 80th Congress (ch. 289, 2d sess.);

(*b*) To accomplish construction and alterations at existing facilities to protect the Government's investment therein.

Summary	Actual obligations, fiscal year 1953	Estimated obligations, fiscal year 1954	Estimate, fiscal year 1955
(1)	(2)	(3)	(4)
02 Travel	$1,475	$2,000	$1,500

Required for engineering inspections of completed construction work prior to acceptance and final payments to contractors.

	Actual obligations, fiscal year 1953	Estimated obligations, fiscal year 1954	Estimate, fiscal year 1955
10 Lands and structures	$78,216	$198,000	$528,500

Beverly National Cemetery, N. J. $141,000
Development of additional acreage and construction of appurtenant facilities to permit continuance of burials.

Fort Logan National Cemetery, Colo. 80,000
Development of additional acreage and construction of minimum appurtenant facilities necessary for the operation of this active cemetery.

Golden Gate National Cemetery, Calif. 47,300
Rehabilitation of deep well water supply system to protect Government investment in cemetery.

Long Island National Cemetery, N. Y. 46,000
Extension of roads and drainage facilities to burial areas.

San Francisco National Cemetery, Calif. $4,500
Repairs to foundation walls of cemetery lodge to protect Government's investment therein.

Willamette National Cemetery, Oreg	$189,700
Development of additional acreage and construction of appurtenant facilities to permit continuance of burials; repair sewage system to remove unsanitary conditions.	
Funds for preliminary planning data for fiscal year 1957	20,000
For engineering investigations of site conditions, preparation of preliminary plans and control estimates required for inclusion in fiscal year 1957 budget for construction items.	
Summary of lands and structures:	
Total of projects as listed	508,500
Funds for preliminary planning data for fiscal year 1957 budget	20,000
Grand total	528,500

BEVERLY NATIONAL CEMETERY, N. J.

Mr. DAVIS. Will you tell us the reason for the need for this $141,000 expenditure at the Beverly National Cemetery in New Jersey?

Colonel MARTZ. Yes. The Beverly National Cemetery in New Jersey was originally established in 1864. It has a developed acreage of 27.7 acres. We have adjacent thereto an additional 36.84 acres, which are the property of the Government and which are available for expansion.

The acres presently developed are rapidly being filled, insofar as burials are concerned. At the rate of burials in that developed space, it will be filled by Ocober of 1955, thus making it necessary to develop some additional land.

We have before you a brief chart which will give you a pictorial idea of our rate of burial, starting with the figures for fiscal year 1951 and running to the end of 1953 and projected into several additional years.

The gray area shows what is developed for grave sites at the present time. During the present year a drainage project, which was approved by this committee last year, and for which funds were made available, gave us additional burial space sufficient to carry us through the fiscal year 1955, over to about October of 1955, at which time we must have increased developed space.

We are asking for funds at this time for the development of an additional 20.2 acres, as being an economic unit, so far as construction is concerned, and that will provide space for an additional estimated 5 years' requirement for burials.

This cost is represented by clearing, grubbing, removing of several old structures which are now on that land, general grading, building of roads, curbs, gutters, drainage facilities, fencing, fertilizing of the land, planting of grass, and landscaping of the area.

Mr. DAVIS. You already have the land.

Colonel MARTZ. Yes. The land is owned by the Government.

Mr. DAVIS. This is just for providing the grave sites?

Colonel MARTZ. The land is there, but it has never been developed.

Mr. DAVIS. Last year it was essentially a drainage problem, taken care of in the funds appropriated.

Colonel MARTZ. That is correct, and this is for the development of an additional area.

Mr. DAVIS. Is that related to a part of the same project you are requesting these funds for, or was it in another project?

Colonel MARTZ. This is another location. The funds which were appropriated last year were to correct a drainage situation in the

cemetery, which released enough grave space in the original part of the cemetery to permit burials through October 1955.

FORT LOGAN NATIONAL CEMETERY

Mr. DAVIS. The Fort Logan National Cemetery, Colo., where you are requesting $80,000, which appears to be somewhat similar to that at Beverly; is that correct?

Colonel MARTZ. That is correct. The Fort Logan National Cemetery is very new, having been authorized by the Congress and established only in 1950. No funds have been appropriated for the development of this area up to the present time. It consists mainly of an old post cemetery at Fort Logan, consisting of 3.2 acres. This project envisions the development of the old fort cemetery, with the addition of another 1.2 acres, incident to establishing the facilities which are normally required in the operation of a cemetery.

At the present time there are no public facilities, no buildings, no water supply, no sanitation facilities. Our superintendent at the present time is maintaining the old cemetery to the best of his ability, using a very small shed to store the limited amount of equipment which he has to use to maintain this old portion of the cemetery.

We have received a great many expressions of interest from the various veterans organizations and other people in the Denver, Colo. area, who are quite anxious that we do something to develop this particular cemetery.

The space available in the old cemetery is rapidly being filled, and the project on hand will give us an additional 5 years' use of burial facilities in that particular cemetery. In other words, we will be developing the old post cemetery which is not in particularly good condition, to a condition, similar in standards of maintenance to the other cemeteries, and will provide the additional burial space needed.

We have, at that cemetery, acquired an additional 155 acres from the old Fort Logan Reservation, which has now been set aside for eventual use of that cemetery. This development work will not be needed for many years.

Mr. DAVIS. You mentioned the figure of 1.2 acres that you planned to procure?

Colonel MARTZ. I am sorry, I should have said 1.8 acres.

Mr. DAVIS. That is for development and there is no new land acquisition involved?

Colonel MARTZ. There is no new land acquisition involved. It is entirely for the development of the old cemetery there, rounding it out to a total area of 5 acres and erecting appropriate fencing; appropriate flagpole to replace the old one which is there; for the provision of a small office and service building for the maintenance personnel; for the installation of sanitary facilities for the use of the public who visit the cemetery.

GOLDEN GATE NATIONAL CEMETERY

Mr. DAVIS. You have indicated a request for $47,300 for the rehabilitation of a deep well-water supply at the Golden Gate National Cemetery. What is the basis of that request?

Colonel MARTZ. At the Golden Gate National Cemetery we have a particularly difficult water-supply system due to the fact that our

water is obtained from three major wells on the cemetery property. That particular area is one in which sand accumulates very rapidly in the deep wells which are being used. Our No. 3 well is presently out of service due to the fact that it has become clogged with sand.

Our water supply is not adequate to maintain the necessary watering operation of the cemetery in order to protect the landscaping which is there at the present time.

We are proposing for this sum to rehabilitate this particular well, No. 3; to add sand traps which were not placed in the original construction of the other wells; to add a piping system whereby the wells will all be integrated into one water system and for repairs to the reservoir which is now used for water-supply purposes.

We estimate that the value of the turf and landscaping facilities now there which will be damaged by lack of an appropriate water supply in a few more years would cost us $232,000 to replace. That is, our landscaping and turfing; so we feel that this investment is a very good one to make—that is our $47,300—to protect our investment in the cemetery.

LONG ISLAND NATIONAL CEMETERY

Mr. DAVIS. At the Long Island National Cemetery you have a request for $46,000.

Will you tell us about that request, please?

Colonel MARTZ. The Long Island National Cemetery is the most active cemetery of the entire system at the present time. Our burials for last year at that cemetery amounted to 3,835, plus an additional 883 reservations for spouses of veterans or their families who were buried there. This made our burial rate during the normal working day when the cemetery was in operation average from 15 to 16 burials per day.

This rapid rate of burial requires a constant action on our part to continue to make available or to expand additional areas of this cemetery in order to meet the requirement from this metropolitan area.

The funds requested for fiscal 1955 are concerned only with the addition of road nets to areas which are already suitable for burying, but to which we do not have access at the present time. A small portion of the amount is to add also some additional drainage basins in that particular area.

SAN FRANCISCO NATIONAL CEMETERY

Mr. DAVIS. At San Francisco you have a request for $4,500 which appears to be for repairs to foundation walls at the cemetery lodge.

Will you give us the details of that?

Colonel MARTZ. We have at the San Francisco National Cemetery, which is one of our older cemeteries, a lodge building which will soon be beyond repair. One wing of the building is sinking quite rapidly so that we have many cracks forming in the wall and will probably find that section of the building completely unusable in the very near future unless essential repairs are made to the foundation of the building.

We estimate that the expenditure of $4,500 to repair this lodge, which was originally constructed in 1929, will enable it to serve our purposes for approximately an additional 50 years.

WILLAMETTE NATIONAL CEMETERY, OREG.

Mr. DAVIS. At Willamette National Cemetery, in Oregon, you have a substantial request in the amount of $189,700.

Will you tell us about that?

Colonel MARTZ. The Willamette National Cemetery was established in 1950 with a total area of 201.45 acres. At that time only 10 acres of this area was developed for cemeterial purposes.

On a chart here showing our burial rates, we have a burial rate, starting in 1951 when the cemetery was opened, and running through the end of calendar year 1953, projected to the end of 1955, fiscal 1955, showing we will run out of grave space approximately in May of 1955. In other words, this is one of our most urgent projects due to the fact that we make every possible effort to provide service to our veterans and certainly do not want to be in the position of having to turn a veteran away because of lack of space.

Mr. DAVIS. Where is the nearest national cemetery to the Willamette site?

Colonel MARTZ. The nearest cemetery to this one is the San Francisco cemetery. Willamette is located at Portland, Oreg., and serves the entire Northwestern States.

Mr. DAVIS. This projection that you have shown, does that take into consideration the provisions that were made in regard to the 1954 funds?

Colonel MARTZ. No funds were authorized at this particular cemetery in 1954.

I should mention that our development calls only for the addition of 11 additional acres at this time.

(Discussion off the record.)

Colonel MARTZ. I should clarify my statement in regard to Willamette. We discussed the Willamette project in the hearings last year, together with other appropriations. However, in applying the appropriations which were eventually made available, some readjustment had to be made within the projects which were discussed last year, in order to meet the construction cost of most urgently needed requirements.

When the construction projects were put into effect, the amount required for Willamette was not available from the total appropriations made available.

ESTIMATES, APPROPRIATIONS, AND ALLOCATIONS, FISCAL YEAR 1954

Mr. DAVIS. Will you insert for the record a statement which will show the amounts which were justified to this committee and the amounts that were allowed by the Congress and the actual allotments that were made for each of the cemeteries last year?

Colonel MARTZ. We will be happy to do that, sir.

(The matter referred to follows:)

Projects defended in the fiscal year 1954 budget ($597,300) and funds allocated under the appropriated amount ($200,000) for project 211, "Cemeterial expenses, Department of the Army"

Item	Amount defended	Amount allocated	Or action taken
Travel	$2,000	$2,000	
Beverly National Cemetery, N. J., interior drainage	88,100	88,100	
Chattanooga National Cemetery, Tenn., access roads to 3 burial areas.	46,600	0	Deferred.
Fort Gibson National Cemetery, Okla., relocation of enclosure on boundaries.	48,700	0	Do.
Fort Logan National Cemetery, Colo., development of 5 acres.	81,100	0	Do.
Golden Gate National Cemetery, Calif., additional drainage.	18,900	0	Do.
Jefferson Barracks National Cemetery, Mo., completion of fiscal year 1953 development project.	11,100	10,760	Reduced scope of project.
Long Island National Cemetery, N. Y.:			
Addition to utility building	10,000	0	Deferred.
Extension of drives to burial areas	53,800	53,800	
Memphis National Cemetery, Tenn., drainage of areas for gravesite use.	42,100	11,500	Reduced scope of project to drain southern area only. Balance of project deferred.
Williamette National Cemetery, Oreg.:			
Development of 14 acres	158,900	0	Deferred. Area previously used for public assembly to be used for burials.
Investigation and budgetary planning data for fiscal year 1956 budget.	21,000	18,840	Reduced scope.
Special study for correcting deficiencies at Arlington Memorial Amphitheater.	15,000	15,000	
Total	597,300	200,000	

Projects selected for accomplishment in fiscal year 1954 were those considered to be most essential to continue burials and to fulfill our primary mission within the appropriated amount.

PRELIMINARY PLANNING FUNDS

Mr. DAVIS. You have an item here of $20,000 for preliminary planning for your fiscal year 1957 program.

Is that your usual practice to plan your program at least 2 years in advance of the actual use of the funds?

Colonel MARTZ. That is correct. It represents the fact that we are asking for specific funds at this hearing only for six particular projects. Whereas we have many studies underway where items are needed in other areas, we have reduced to this requirement for the present fiscal year as being the most important.

Mr. DAVIS. Did you set out a separate item for this purpose last year?

Colonel MARTZ. Yes, sir.

AMPHITHEATER, ARLINGTON NATIONAL CEMETERY

Mr. DAVIS. One of the things that the general appeared considerably concerned about last year—and it was a concern that the members of the subcommittee shared—was the deterioration of the amphitheater at the Arlington National Cemetery.

Can you tell us how you are getting along with the studies that were indicated at that time?

Colonel MARTZ. Yes, sir, those studies are being made by the Corps of Engineers for the Quartermaster Corps. The Corps of Engineers have let a contract with a reputable architectural firm for a detailed study of the condition of the amphitheater, and their

technical advice and recommendations as to what will be required to restore the building to its original condition.

Mr. DAVIS. Can you give us any indication as to when that report is anticipated?

Colonel MARTZ. Those studies will require the greater part of a year due to the need for studying the expansion and contraction of the marble construction of the building over all of the temperature conditions throughout a period of 1 year.

MAINTENANCE AND OPERATIONS

Mr. DAVIS. You have indicated an increase in your required funds for maintenance and operations, and you have indicated in your statement, General Hastings, that the main reason for this was the increased interment activity.

Why do you estimate an increase during the 1955 fiscal year over the 1954 fiscal year?

Colonel MARTZ. Funds for this project are broken down into several different categories, as set forth in our justifications. They include travel, transportation, communications services, contractual interment, and purchase of supplies and equipment.

TRAVEL AND TRANSPORTATION

The request for travel is the same as in the preceding fiscal year. The request for transportation of things has increased by $400. This item is needed to pay for drayage costs at those national cemeteries where we do not have Government vehicles. It also pays for the transportation of household goods of our cemetery superintendents at such times as they may be transferred from one cemetery to the other. A small increase represents a normal increase in the costs of these items.

COMMUNICATIONS SERVICES

Under the heading of "Communications Services" we have asked for a small increase, which is directly related to our increased rate of interments.

In other words, both telephone calls and telegrams are required for practically every interment that is made at a national cemetery.

Our estimated increase of 2,477 interments in 1955 over the present year is responsible for an estimated increase in the need for additional telephone and telegraph funds.

RENTS AND UTILITIES

The increase of $1,000 requested in the item for rents and utilities services is due entirely to the increasing need for electrical power in our various buildings and facilities. As we expand and add to our cemeteries and as we add additional labor-saving equipment, this increase will be necessary.

CONTRACTUAL SERVICES

Under the item of "Other contractual services," these other services are required for the maintenance of equipment, buildings and grounds that cannot be accomplished by our own labor personnel due to the

lack of required skills and facilities. It can be broken down into the maintenance of equipment in which we have a maintenance cost for vehicles, power equipment and interment equipment.

I would like to state that the amounts indicated for maintenance of this equipment represent 6 percent of the value of the vehicles and power equipment which we now have in use and 7 percent of the value of our interment and miscellaneous equipment.

The second part of our contractual services is for maintenance of buildings and grounds, roads, walks, fences, gates, flagstaffs, monuments and tablets, and represent approximately six-tenths of 1 percent of the value of the buildings and appurtenances which we now have under our jurisdiction. In other words, in regard to the buildings concerned, there is a requirement for a certain amount of maintenance such as painting, replacing of woodwork, interior plaster repairs and items of that sort. It provides for the patching of our driveways and curbs; it provides for the cleaning of septic tanks, rep acement and repairs of our sewage and drainage systems, and covers the painting of our cemetery walls, fences and gates; the painting and cleaning of flagstaffs, monuments and major repairs on the heating plants in the buildings under our supervision.

There is no increase in any of these items insofar as the maintenance of buildings and grounds is concerned over our expected expenditures in 1954.

Under miscellaneous contractual services our need is based on the fact that we have seven national cemeteries, 20 soldiers' lots and 6 Confederate cemeteries and plots not provided with superintendents or labor personnel, but which are maintained by us.

Mr. DAVIS. Are those the smaller national cemeteries?

Colonel MARTZ. The smaller areas which do not justify the maintenance of a full-time man.

Mr. DAVIS. Is that the same amount that you had last year?

Colonel MARTZ. That amount is the same as the fiscal year 1954. It provides, of course, also for contractual burials where there is just an occasional burial at some of these older and smaller cemeteries, and it also provides for a considerable amount of tree surgery in all of our national cemeteries which we must do by contract. Even at the Arlington National Cemetery we must contract with competent and qualified tree surgeons to repair and maintain the trees and shrubs which we have there.

The additional item of "Supplies and materials" provides for a very small increase of $3,000. All of the items under our supplies and materials, which include normal things such as paint brushes, pipe, recharges for fire extinguishers and items of that sort are the same as last year.

The same statement is true for our grass seeds, fertilizers, insecticides and items of that sort needed for maintenance of the cemeteries.

One increase which we have requested is for an additional purchase of flags for replacement of unserviceable flags for Memorial Day services.

EQUIPMENT

On the last item of equipment under "Operations and maintenance" we have asked for an increase which is substantially more than that of the present fiscal year. This item can be divided into replace-

ment equipment and additional equipment. The items under replacement equipment, of course, are required to replace those items of existing equipment which were worn out through normal wear and tear and which are required for our operations. Items of this type would be air compressors, grass mats used at the time of the funeral, grave-digging machines, pneumatic hammers, lowering devices and a few lawn mowers and items of that particular sort.

We have found that in the last year, or in the present year, particularly, that we have a very limited amount of funds to use for this purpose and we are finding it more and more difficult to keep our equipment in service. So, we are finding that many of these items need to be replaced during fiscal year 1955.

The item for additional equipment is needed to add items of power equipment which will, in turn, make it more economical to operate our cemeteries. This additional equipment is required primarily due to the fact that we are gradually expanding all of our cemeteries insofar as space is concerned, and insofar as the number of burials are concerned where the area in which graves and headstones are present is much more difficult to maintain than an area of flat lawn surface.

Mr. DAVIS. Where do you plan to put this new additional equipment that you speak of? If your answer has to be lengthy at all, you can supply it for the record at this point, if you prefer to do that.

Colonel MARTZ. Under "Additional equipment" the largest item we have listed under the amount of $26,000 is $10,000 earmarked for a grave-digging machine which will be used for the Golden Gate National Cemetery. Our next largest item is for seven power lawn mowers.

Mr. DAVIS. I suggest that you put those in the record as to location.

Colonel MARTZ. We will be glad to do that, sir.

(The matter referred to follows:)

National cemetery equipment, fiscal year 1955 budget

Cemetery	Item description	Additional
Beverly	1 sweeper, leaf patrol	$275
Finns Point	1 trimmer, power	80
Long Island	1 truck, dump, 2½-ton	3,000
	1 welder, arc	450
	4 trimmers, power	320
	2 mower, lawn, power, 76-inch	1,600
	1 cooler, water, electric	350
	1 distributor, seed and fertilizer, 8-foot	100
Black Hills	1 trimmer, hedge, electric	80
Camp Butler	1 compressor, air	1,000
	1 mower, lawn, power, 18-inch	175
Fort Scott	do	175
Fort Snelling	1 mower, power, lawn, 76-inch	800
Jefferson Barracks	1 greaser and gun	145
	1 carrier, casket, truck	300
Rock Island	1 compressor, air, with attachments	1,000
	1 pump, grave, GED	200
	1 mower, power, lawn, 76-inch	800
Golden Gate	1 grave digging machine	10,000
Willamette	2 compressor, 105 CFM	2,000
	1 mower, power, lawn, 76-inch	800
National Memorial Cemetery of the Pacific.	1 welder, arc, electric	450
Puerto Rica National Cemetery	1 truck, pickup, ½-ton	1,900
Grand total		26,000

NOTE.—Estimated costs include transportation and handling.

ADDITIONAL FIELD PERSONNEL

Mr. DAVIS. On pages 20 and 21 in the justifications you have requested additional field personnel.

What is the basis for that requested increase?

Colonel MARTZ. We are requesting an increase of 36 man-years over the 500 expected in fiscal year 1954.

These 36 man-years are broken down as follows: Our increased interments of 2,447 during this fiscal year 1955, based on our experience factor that it takes one man to make 157 interments during a year which, incidentally, is an increase over the ratio of 140 interments per man in the past year, will call for an additional 16 man-years of labor.

The addition of developed acreage will require 4 additional man-years based on 43 additional acres being developed in our cemetery system during the past year. We estimate that acreage that is developed can be maintained at the rate of 10 acres per year by 1 man. When these acreages, in turn, become interment areas in which we actually have interments, we find that one man can maintain only 5 acres per year.

In the cemetery system at large we have 47 acres which have gone from a developed stage to the interment stage during the past year, thus requiring an additional 9 man-years of labor. We have estimated for this additional personnel a need also for 2 additional foremen for labor supervision, on the basis of 1 foreman per 10 men, and the equivalent of 5 man-years for seasonal labor.

Mr. DAVIS. This personnel might be classified chiefly as the labor type personnel?

Colonel MARTZ. The labor-type personnel, that is correct. They are labor-type personnel and the men who do the grave digging, the mowing of the lawns and the other maintenance operations.

Mr. DAVIS. What would you anticipate their present annual salaries to run, roughly speaking?

Will you justify that in the record at this point, please and then we will proceed?

Colonel MARTZ. We will insert it in the record, sir.

(The matter referred to follows:)

The average annual salary of ungraded labor requested in the budget estimate for the fiscal year 1955 is $3,337, the same expected to be paid in fiscal year 1954.

OVERSEAS PERSONNEL

Mr. DAVIS. You have indicated an increase in overseas personnel. Can you tell us why that is necessary?

Colonel MARTZ. The increase in overseas personnel applies primarily to the National Memorial Cemetery of the Pacific located at Honolulu. At that particular cemetery we have been having difficulty in the past 2 years in maintaining the cemetery at our desired standards with funds which we have been able to give them.

It is our belief that the cemetery superintendent there is doing a good job with the manpower that he has, but that he does need additional personnel to maintain the cemetery at the standard which we feel should be required.

Mr. DAVIS. How many people will that be?

Colonel MARTZ. I do not have that exact figure here but we will be glad to provide it, Mr. Chairman.

Mr. DAVIS. All right, if you will.

(The matter referred to follows:)

Six additional man-years of ungraded labor will be provided in the National Memorial Cemetery of the Pacific.

STATUS OF PROGRAM FOR RETURN OF KOREAN WAR DEAD

Mr. DAVIS. What is the status of your program for the return of the Korean war dead?

Colonel MARTZ. The return of our Korean war dead program, of course, is being accomplished by military appropriations under our military appropriation for current death purposes.

This program was maintained on a current basis since 1951, and upon the cessation of hostilities, had developed to the point where certain residual search and recovery work and residual actions only were required.

The total killed and missing—I should say the approximate number killed and missing during the Korean operation was slightly in excess of 36,000 persons. Of this number, as of the 31st of December 1953, 24,653 have been shipped to their home in the United States or to the homeland as designated by the next of kin.

We have in our mausoleums at our identification center in Japan approximately 1,300 remains, the majority of whom are unknowns at this time, but which are still being processed for identification.

We also have in North Korea 8 temporary cemeteries which were established there during the time our troops were in that area, which contain slightly over 1,500 known burials of American personnel who were interred there by our own units.

We also have an estimated 1,100 personnel who died while they were in prison camps, based upon information furnished by the Chinese and North Koreans.

The status of these personnel is as follows: The cease-fire agreements of last summer provided for each side to send graves-registration personnel to places of known burial within the territory of the other side for the purpose of effecting recovery of their dead, but in accordance with administrative arrangements to be made by the United Nations Armistice Commission. As of this date, these administrative arrangements have not been made by the Armistice Commission and we have not been permitted as yet to go to the location of these eight burial areas in North Korea. What the future will be in that respect, we cannot predict. We can, in turn, not predict when we might be permitted to go to the places of burial of the men who died while they were prisoners, according to information furnished us from the enemy.

This number of individuals still leaves us with almost 8,000 persons who are still in a missing in action status or in a killed in action but not recovered status. Some of these individuals are still reported as being lost in the area of South Korea and our search and recovery teams are presently combing those areas in an effort to make any additional recoveries. Whether or not we will ever be permitted to send search and recovery teams into the hills and valleys of North Korea is something which we cannot predict at this time.

So, our present situation is that we do have a number of unknown remains on hand in Japan which are being processed for identification, and we anticipate a number of those cases will still be identified and returned home. Of course, we will have some unknowns which will permanently be unidentifiable.

VETERANS' RIGHTS FOR BURIAL IN NATIONAL CEMETERIES

Mr. HAND. In the early part of your statement when you gave us the general scope of veterans' rights to these burials you used the phrase, I think, "in certain cases minor children."

Would you amplify that a little bit?

Colonel MARTZ. I would like to clarify my statement by reading, with your permission, about two sentences from the public law which describes the authorization in detail:

> Any member or former member of the Armed Forces of the United States whose last service terminated honorably by death or otherwise; any citizen of the United States who during any war in which the United States has been or may hereafter be engaged, served in the Armed Forces of any government allied with the United States during such war and whose last service terminated honorably by death or otherwise; the husband, wife, widow, widower, minor children, and in the discretion of the Secretary of the Army, unmarried adult child of any of the persons enumerated above.

Mr. HAND. Does that include all minor children?

Colonel MARTZ. Yes, sir.

Mr. HAND. What is the citation of that authorization?

Colonel MARTZ. This is an excerpt from Public Law 526 of the 80th Congress.

Mr. HAND. I gather from what you read that there is not even the usual 90 days' service restriction which we find so often?

COLONEL MARTZ. That is correct.

Mr. HAND. If you serve 1 day you are entitled to the benefits of this law?

Colonel MARTZ. Yes, sir.

Mr. HAND. Do you have any estimate, Colonel, as to the cost that would be involved if we get rid of all these pending cases at once?

We always have pending cases that we cannot dispose of—pending applications for headstones.

Colonel MARTZ. Yes, sir.

Mr. HAND. I suppose the number of interments times the cost of the market would be the answer; would it not?

Colonel MARTZ. That is true. Our estimates in that respect, sir, are based on our present rate of receipt of applications, and the fact that we have expected that at the end of any fiscal year we would have a certain number of applications on hand which had not yet had time to be processed. We have shown that in our justifications here, the figures represent an average month's workload in our office at the present time. From the date of receipt of an application in our office, it is approximately 30 days until the contractor is at work supplying that particular headstone. That has been a decrease from about 50 days' time lag back in 1952 and the early part of 1953 due to various revisions in our operations in our own office and streamlining of our procedure to shorten that particular time lag.

STATUS OF FUNDS FOR PROCUREMENT OF HEADSTONES

Mr. HAND. Do you now, or will you at the end of this fiscal year, have pending applications for headstones that you cannot fill because of lack of funding?

Colonel MARTZ. Yes, sir.

Mr. HAND. I do not mean from the standpoint of lag in processing but because of lack of funding.

Colonel MARTZ. Yes, sir. It is our estimate that the present rate of receipt of applications and the present rate of expending funds now available, that we will probably exhaust those funds about the latter part of April of this year. In other words, applications received subsequent to that date will have to be held over until the new fiscal year and until we can actually process them to completion.

Mr. HAND. What would be the approximate number involved?

Colonel MARTZ. The approximate number in that case would be 14,511.

Mr. HAND. 14,511 headstones undelivered because of lack of funds and not because of any lag in processing time?

Colonel MARTZ. That is correct. That is as of the end of fiscal year 1954, sir; is that the question?

Mr. HAND. Yes, sir. So, that the cost of liquidating that pending item would be about $280,000, would it not, or a little bit more perhaps?

Colonel MARTZ. Yes, that is about right, multiplying our average costs times the number of headstones.

Mr. HAND. Colonel, this is a very minor point, but in calculating and estimating your costs of transportation, would it not be better to use the State's center of population, which is in most cases different from the capital? For example, the veterans' population in New Jersey is concentrated in Newark, and that is a city five times the size of the State capital; in Maryland, Baltimore is many times the size of the State capital; in New York, New York City is many times the size of Albany. Would that not be a better method of calculation?

Colonel MARTZ. It possibly would, sir, although I am speaking again offhand and I doubt if it would make more than a couple cents difference in the actual cost of our transportation on a nationwide basis.

TAXES AND ASSESSMENTS

Mr. HAND. What is the item for taxes and assessments, Colonel, in which there is an increase shown of $9,565?

Colonel MARTZ. That, sir, is based on the increase of payments for the Federal Insurance Contributions Act.

Mr. HAND. That is for your personnel?

Colonel MARTZ. Yes, sir; for our employees.

Mr. HAND. Last year I recall having some concern at what I suspected might be too much personnel here at the seat of government. Do you have any comment to make on that?

Colonel MARTZ. The only comments, sir, are that we honestly feel we could use even a few more people than we have asked for. However, in an effort to be as reasonable as possible in our requests, we have asked for the same amount of funds which were asked for in

fiscal 1954. So far as our workload is concerned in this field, it is increasing in our office the same as our rate of interment is increasing in the field, because every interment must be verified by personnel in our office as to whether that individual being buried was honorably discharged and whether he is eligible. We have many cases which we have to turn down, involving people who, for one reason or another, are not eligible and who would soon fill up our cemeteries if we did not check that very carefully.

PERSONNEL IN WASHINGTON OFFICE

Mr. HAND. How much personnel do you have working in your Washington office during this current fiscal year?

Colonel MARTZ. We have a total of 115 at the present time, sir.

Mr. HAND. Did you receive the increase last year which you requested?

Colonel MARTZ. No, sir; we did not get that increase.

Mr. HAND. But you got along without it?

Colonel MARTZ. We got along without it, but like everyone else we deferred a few things which we would like to have done and which we had to let go by until some future time.

MAINTENANCE PERSONNEL

Mr. HAND. It was my impression in listening to your testimony that the man-years, or the average that a man could take care of in your interment program was a pretty reasonable figure, but I was not quite so favorably impressed with the average acres taken care of by a man.

Do you have any comment to make on that? I think you said 1 man was used for 10 acres until there was developed interment and then 1 man for 5 acres.

Colonel MARTZ. That is correct, sir.

Mr. HAND. Bearing in mind that throughout most of the United States the amount of work that can be done to maintain that number of acres is sufficiently limited, do you think that is a reasonable average figure?

Colonel MARTZ. Yes, sir; we do. We have calculated also that in an area of some of our older and smaller cemeteries that if the cemetery is less than 20 acres, a man can do less and maintains less than 5 acres per man, due to the fact that the smaller the cemetery, the more additional work there is which you might call overhead, such as fences and buildings and items of that sort which is considered a part of his duties to help maintain and keep up. We find that when a cemetery is larger than 20 acres our experience has shown that 5 acres per man is about what we can expect those people to do.

Mr. HAND. All of these men are thoroughly mechanized so far as grass-cutting machinery and so forth is concerned; are they not?

Colonel MARTZ. To the extent practicable. In some of our smaller cemeteries there is a lot of hand work that has to be done due to the fact that it would not justify the use of large labor-saving equipment.

Mr. HAND. You do not use anything like the old-fashioned lawn mower any more; do you? I realize you have a certain amount of edging work to do, but you do not still use the old-fashioned lawn mower?

Colonel MARTZ. Yes, sir, we still have the edging work to do. We find that at some of the smaller cemeteries it is more economical to do it by hand than by power equipment, particularly around buildings and things of that sort.

Mr. HAND. This is all grass; is it not? You do not maintain very many flower gardens?

Colonel MARTZ. No, only to a very limited extent. There might be a few flowers around flag poles, or something of that sort, but very limited.

Mr. HAND. Trees do not require work other than outside contracting work, pruning and so forth?

Colonel MARTZ. Some of that work is done by our personnel, such as when the wind blows a tree down or something of that kind, our normally employed individuals can do that work cheaper than hiring a tree surgeon.

EFFICIENCY OF PERSONNEL

Mr. HAND. Has there been any recent examination of the efficiency of the personnel by your Department or any other department of Government?

Colonel MARTZ. We do have regular inspections by the Inspector General's Office of the Department of the Army, who inquires into the efficiency of the personnel against standards that have been set up as to what a man is expected to do in each category of work. Those inspections are made and reports submitted to our office if they feel there is some need for improvement on the part of the efficiency of the superintendent or any of his people.

Mr. HAND. Would you mind submitting a copy of the latest available report for the record?

Colonel MARTZ. Yes, sir.

(The matter referred to follows:)

TYPICAL COMMENTS IN SUPERVISORY INSPECTION REPORTS

JANUARY 7, 1954.

Subject: Annual inspection of Fort Bliss National Cemetery.

* * * * * * *

(*b*) Permanent Wage Board employees:

(1) Laborers employed: Four.

(2) Adequacy: All competent workers. Four are adequate during winter months but increase to five is necessary and will be effected in the spring.

OCTOBER 27, 1953.

Subject: Report of annual inspection, Fayetteville National Cemetery, Fayetteville, Ark.

* * * * * * *

(*a*) Personnel: Not considered adequate since, under the present funding program, it was necessary to reduce cemeterial labor to one laborer. This labor is not sufficient to maintain and operate the national cemetery and will result in a drastic curtailment of essential work.

MAY 25, 1953.

Subject: Report of annual general inspection, Baltimore National Cemetery, fiscal year 1953.

* * * * * * *

8. Personnel have not had adequate opportunity for leave due to the shortage of personnel and the workload of maintaining the large acreage and preparing and maintaining grave sites.

AUGUST 26 1953.

Subject: Report of Annual General Inspection, Arlington National Cemetery, Fort Myer, Va.

* * * * * * *

2. Inspection indicated that the provisions within the current TD for graded civilian positions is adequate and that the assigned strength meets the cemetery requirements. However, it was noted that, although 99 ungraded positions have been made available to the cemetery, only 80 of these positions have been filled. Throughout the course of the inspections of grounds, shrubs, walkways, roadways, et cetera, many unsatisfactory conditions were observed as cited in tabs D and E, which existed due to the fact that there was a shortage in ungraded personnel. It was further reported that this shortage of personnel actually present of approximately 19 ungraded employees is due principally to shortage of funds. In view of the existing circumstances, including the fact that Arlington has a unique status among national cemeteries, it is the opinion of the inspecting officers that sufficient additional funds should be allocated to the cemetery to enable it to employ its full authorized complement of ungraded civilian employees. This lack of sufficient ungraded employees was the reason given for the existence of the same unsatisfactory conditions which were noted in the last previous annual general inspection, and if these facts are true, it is recommended that immediate and intensive action be initiated to obtain sufficient additional funds from the Quartermaster General to enable the cemetery to employ its full authorized complement of ungraded civil service employees.

BEVERLY NATIONAL CEMETERY, N. J.

DRAINAGE AND ACQUISITION OF EASEMENT

Mr. HAND. Just 2 or 3 questions on specific land problems. I remember last year we were talking about the national cemetery at Beverly, N. J., and you were appropriated funds largely to take care of a drainage problem and the acquisition of an easement. Did you actually put in that drainage and acquire the easement?

Colonel MARTZ. Those funds were turned over by us to the Corps of Engineers who are in the process now of having contracts let for the work to be done.

Mr. HAND. Do you have any information as to whether you purchased the easement involved, and if so at what cost?

Colonel MARTZ. The easement has not yet been cleared through the owners according to the latest information we have.

Mr. HAND. My recollection is, and I refreshed my memory recently on the hearings, that the easement was to be acquired for drainage into the Delaware River at a cost of $8,000, and since the easement did not interfere with the use of the land I got the impression it was too much money. Has there been any recent development so that we can save money on that? That is funded by you but not yet spent?

Colonel MARTZ. That is right. The latest information we have from the engineers is that it will cost $8,075 for the easement. It has not yet been finally agreed upon, though.

Mr. HAND. Does it not occur to you that that cost is excessive in view of the fact the easement will not interfere with the use of the land taken? It is merely a matter of putting a subterranean pipe through.

Colonel MARTZ. As I recall from visiting that cemetery last fall, although it was an engineering problem, it was going through a developed orchard which was going to cause some difficulty to the owner in his operation of that orchard at least during one season while the work was being done. A lot of that cost, as far as we are concerned, we are

not in position to develop further since it is being done by the engineers for us. We will be glad, sir, to obtain additional comment in that respect from the engineers and give you an exact breakdown of the present status.

Mr. HAND. It is a comparatively small item, but I would be personally glad to have that information.

(The matter referred to follows:)

BREAKDOWN OF COST FOR ACQUISITION OF EASEMENTS FOR DRAINAGE FACILITIES

Beverly National Cemetery, N. J., fiscal year 1954

Tract No.	Acres	Required for—	Tract No.	Acres	Required for—
1	0.94	Sewer line.	6	1.44	Channel development.
2	.16	Do.	7	.005	Do.
3	.86	Do.	8	.005	Do.
4	.17	Channel development.	9	.01	Do.
5	.17	Do.			

Total acreage 3.76, with an aggregate value of $3,800. Peach trees on tract No. 1, which will be damaged at taking, are estimated to cost $1,950 (50 trees at $35 to $40 each).

Summary of costs

Land	$3,800
Peach-tree damage	1,950
Contingencies	575
Acquisition costs	1,750
Total	8,075

Title evidence for three of the tracts has been received. Appraisals will be obtained as soon as definite descriptions are available. Anticipate commencement of negotiations for options on or about February 15, 1954.

GOLDEN GATE NATIONAL CEMETERY

Mr. HAND. At Golden Gate National Cemetery, how many wells do you have there? The wells, I take it, are entirely for water supply and to water the grass?

Colonel MARTZ. That is right, sir. There are three wells in the cemetery at the present time.

Mr. HAND. How many acres are there in that cemetery?

Colonel MARTZ. The Golden Gate National Cemetery consists at the present time of 161½ acres, of which 119 are developed.

Mr. HAND. How deep are the wells and what is their capacity?

Colonel MARTZ. I would prefer to furnish that information to be sure it is correct.

Mr. HAND. Are deep wells needed?

Colonel MARTZ. Yes, sir. That is the only source of water in that area.

Mr. HAND. You cannot get water from a shallow well in that area?

Mr. DORMAN. No, sir, they must be 600 to 900 feet deep or more.

Mr. HAND. Nine hundred feet before you get water?

Mr. DORMAN. Yes, in the quantity that we need.

Mr. HAND. Do you have an irrigation system?

Mr. DORMAN. Yes, sir.

Mr. HAND. Underground piping?

Mr. DORMAN. We have underground piping and an automatic system in part of the cemetery. In our extensions of piping we put in the sprinklers.

Mr. DAVIS. Will you supply for the record a table which will provide the committee with data on water supply?

(The matter referred to follows:)

TECHNICAL DATA ON WATER SUPPLY, GOLDEN GATE NATIONAL CEMETERY, SAN BRUNO, CALIF.

Reservoir: 1, concrete, 500,000-gallon capacity, constructed 1941.

Booster pumping plant: 1, at 700 gallons per minute.

Basic water demand: 3 inches per month in addition to normal rainfall per irrigation season (6 months). The following table shows water requirements, for the cemetery:

Per month (6-month season)	3 inches.
In 130 days (5-day week)	18 inches.
Per day	0.0115 feet.
Per acre per day	3,750 gallons.
Per minute (8-hour day)	78 gallons.

Total grassed areas: 143 acres require irrigation; 143 times 3,750 equals 536,250 gallons per day required.

There are approximately 125 working days in a 6-month period: 125 times 536,250 equals 67,031,250 gallons of water required (in addition to rainfall) in an average season.

Wells

	Well No. 1	Well No. 2	Well No. 3	Well No. 4
Drilling started	1941	1941	1948	1952.
Well completed	1942	1942	1949	1953.
Depth	600 feet	Reported 900± feet.	600 feet	630 feet.
Type of well	Gravel envelope	Gravel envelope.	Gravel envelope	Gravel envelope.
Casings, diameter	26 inches outer, 14 inches inner.	Not known	26 inches outer, 16 inches inner.	30 inches outer, 14 inches inner.
Static water level	230 feet	do	202 feet	
Pumping equipment	Fairbanks-Morse 12-stage turbine.	do	Same as well No. 1.	Fairbanks-Morse turbine.
Capacity	300 gallons per minute.	do	150 gallons per minute.	450 gallons per minute.
Special conditions	By January 1951 sanded up to 450 feet.	Abandoned [1]	By January 1951 sanded up to 400± feet.	[2]
Cost (total)	$28,000 [3]	Not known	$31,460	$6,938.[4]

[1] This well sanded up and was abandoned. It is located on the 60± foot strip of cemetery property which was turned over to the State of California by easement to widen El Camino Real.

[2] To compensate for the loss of the 60 foot easement described above, the State of California provided a 2.07±-acre parcel of ground contiguous to the northerly end of the northwest leg development and drilled, and constructed a pumphouse over Well No. 4 without cost to the U. S. Government.

[3] Approximate.

[4] Cost of pumping equipment only.

WILLAMETTE NATIONAL CEMETERY

Mr. HAND. Did I understand, Colonel, from your testimony that the money the committee made available to you last year for Willamette National Cemetery was not expended?

Colonel MARTZ. The total money made available was expended on the projects which were defended before the committee. However, due basically to construction costs there was not enough money to go around.

DEVELOPMENT OF ADDITIONAL ACREAGE

Mr. HAND. You had a request for the development of 14 additional acres at that time. Were you able to develop them?

Colonel MARTZ. No, nothing was developed in Willamette due to the fact that appropriations finally made were, of course, considerably less for the projects discussed last year.

Mr. HAND. When you say "of course" are you complimenting the committee?

Colonel MARTZ. As a taxpayer, yes.

Mr. HAND. Your present request is to develop 11 acres?

Colonel MARTZ. Eleven additional acres.

Mr. HAND. And the cost of that is $189,700?

Colonel MARTZ. That is correct.

Mr. HAND. What do you propose to expend that money on?

Colonel MARTZ. The largest single item will be required for the clearing, the grubbing, rough grading, drainage, stripping, storing, and replacing of topsoil, which amounts to $72,654. That is the biggest single item.

Mr. HAND. What is the character of that land?

Colonel MARTZ. It is on a hilltop outside the city of Portland and is entirely undeveloped land. I have here a photograph which shows the condition of the land and the original 10 acres. The additional area being developed will extend in this direction. Most of this is scrub-pine growth.

Mr. HAND. Who does that clearing for you?

Colonel MARTZ. This will be done by contracts let by the Corps of Engineers in the Northwest area.

Mr. HAND. Is it on their estimate that you are basing your request?

Colonel MARTZ. Yes, sir.

Mr. HAND. That $72,000 leaves $115,000. Generally speaking, what is the $115,000 to be spent for?

Colonel MARTZ. In round figures, sir, $20,000 for the additional roads, and $11,700 for concrete curbs and gutters.

BREAKDOWN OF REQUEST

Mr. HAND. With the chairman's permission, may we have a detailed breakdown of that $189,700?

Colonel MARTZ. Yes. We will be glad to furnish that.

(The matter referred to follows:)

Fiscal year 1955 budget estimate Willamette National Cemetery, Portland, Oreg.

Item No.	Item	Quantity	Unit	Unit cost	Total estimated cost
	MODIFICATION OF SEWAGE DISPOSAL SYSTEM				
1	8-inch sewer pipe	530	LF	$3.40	$1,802
2	6-inch drain pipe	215	LF	2.80	602
3	Sand filter		LS		4,700
4	Plugholes in existing distribution box	2	EA	15.00	30
5	Open ditch, 12 inches by 12 inches	100	LF	.30	30
6	Connect floor drain in lodge to manhole		LS		225
7	French drain	170	LF	4.00	680
8	Manholes	4	EA	225.00	900
	DEVELOPMENT OF 11 ACRES				
9	Clearing and grubbing	11	AC	600.00	6,600
10	Site grading and stripping topsoil	72,000	CY	.80	57,600
11	Roads and parking	5,860	SY	4.00	23,440
12	Concrete curbs and gutters	5,860	LF	2.25	13,185
13	Underground concrete storage reservoir (100,000 gallons)		LS		18,765
14	Booster pump (100 gallons per minute)	2	EA	3,100.00	6,200
15	Extend lawn watering system		LS		14,400
16	Construct new flagpole area including flagstone pavement and move existing pole		LS		1,300
17	Rostrum including flagstone pavement		LS		5,346
18	New chain-link fence	1,465	LF	4.00	5,860
19	Relocate existing chain-link fence	700	LF	2.00	1,400
20	Topsoiling including hauling, distributing, and leveling	10,000	CY	1.80	18,000
21	Fine grading, fertilizing, and seeding	49,500	SY	.17	8,415
22	Lay out grave sites and install terra-cotta markers		LS		220
	Total estimated cost				189,700

NOTE.—This estimate has been prepared to reflect costs as of Jan. 1, 1954.

Prepared by Estimating Section, Specifications and Estimating Branch, Engineering Division, Military Construction, OCE.

SEASONAL EMPLOYEES

Mr. CEDERBERG. Do you have any employees on a seasonal basis?

Colonel MARTZ. Yes, we do. A certain number of employees are employed during the rush seasons. They are really part-time employees.

Mr. CEDERBERG. In other words, when the grass grows the most you have the most employees?

Colonel MARTZ. That is right.

INADEQUACY OF FUNDS FOR PROCUREMENT OF HEADSTONES

Mr. CEDERBERG. It appears at the end of the fiscal year you do not have enough money to take care of those unfortunate enough to need markers, and they have to wait until the start of the next fiscal year. Has that been true right along?

Colonel MARTZ. That has been true for the past 4 years, where there has been a carryover each year of items in that category. The amount we are now requesting we anticipate will put us on a current basis by the end of fiscal 1955.

Mr. CEDERBERG. Including taking up the gap between the end of April and the end of this fiscal year?

Colonel MARTZ. That is right.

Mr. CEDERBERG. So that in the next fiscal year you will not run into that problem as far as you can see?

Colonel MARTZ. That is right, sir.

Mr. CEDERBERG. Certainly it does not seem reasonable to me, for a paltry sum of a couple hundred thousand dollars, to make people wait that long. When I say a paltry sum, I mean by comparison to other Government expenditures, that is peanuts.

Colonel MARTZ. We do have many complaints from people who have to wait too long for headstones, which makes an additional administrative burden.

Mr. CEDERBERG. We have to furnish them eventually, anyway.

Colonel MARTZ. That is right, sir.

COOPERATION WITH AMERICAN BATTLE MONUMENTS COMMISSION

Mr. CANNON. I note in your statement that you have control of cemeteries in the continental United States and possessions of the United States. Do you also have jurisdiction of cemeteries in foreign countries?

Colonel MARTZ. No, sir; we do not.

Mr. CANNON. That comes under the Commission?

Colonel MARTZ. Under the American Battle Monuments Commission.

Mr. CANNON. Do you cooperate or collaborate with the Commission?

Colonel MARTZ. Yes. We are constantly working with the members of the staff of the Commission in the exchange of ideas and assisting each other in our respective problems.

REQUIREMENTS FOR HEADSTONES

Mr. CANNON. The demand for headstones, of course, would be governed by conditions over which you have no control. As the number of interments increases, the demand for headstones increases. You must make provision for them, and you have no choice in the matter.

Colonel MARTZ. That is correct, sir.

Mr. CANNON. I believe you said that the end of every year you have had a backlog of requests for headstones?

Colonel MARTZ. That is correct, for the last 4 years.

Mr. CANNON. So that your work is largely stabilized throughout the year?

Colonel MARTZ. That is correct, sir.

CHOICE OF CEMETERIES AND HEADSTONES

Mr. CANNON. Does the veteran's family have any choice as to cemeteries?

Colonel MARTZ. Yes, they may request burial in any national cemetery.

Mr. CANNON. Do they have any option as to the character of stone provided?

Colonel MARTZ. Yes, sir. We have, for your information, a picture of the several types of stones which are used.

Mr. CANNON. Some of them are erect and some are flat?

Colonel MARTZ. That is correct.

Mr. CANNON. Some are marble, some granite, and some bronze?

Colonel MARTZ. That is correct.

Mr. CANNON. That is within the option of the family?

Colonel MARTZ. That is true, modified by this statement: In most of our older national cemeteries we are using the upright type of stone. In our newer cemeteries, such as Willamette near Portland, Oreg., we are using only the flat ones. That is consistent with the type of cemetery most popular in that part of the country. The bronze markers we are not using in any of our national cemeteries. However, since 77 percent of the headstones are placed in private cemeteries, we give the veteran's family the option of choosing the type most suitable for the particular cemetery.

Mr. CANNON. There is very little difference in the cost of the different types?

Colonel MARTZ. The difference in cost is very little, except the bronze markers have been a little more expensive than the others. However, we have had a decrease in the price of bronze markers in the last year and I think they will come more in line with granite and marble markers.

Mr. CANNON. Does the family also have choice as to cremation?

Colonel MARTZ. At their specific request only.

Mr. CANNON. In such instances what disposition is made of the ashes.

Colonel MARTZ. They would be interred in an urn.

TREND OF VOLUME AND COST OF SERVICES

Mr. CANNON. What is the trend as to the extent of your services, are interments gradually increasing or do you see any prospect of a decrease and what is the trend in costs?

Colonel MARTZ. The unit cost of our service has fluctuated for two reasons. It has gone up as the national price index has gone up for items of that type. As far as the mechanics of placing orders, we have increased our efficiency, but that is a very small percentage of the entire cost. As to volume, the volume will increase in direct proportion to the increase in the veteran population, which, of course, will be going constantly up due to the large veteran population we have at the present time.

Mr. CANNON. You do not recommend, apparently, appropriations of a sufficient amount to bring all cemeteries up to date. Mr. Cederberg, I thought, made a very reasonable point that if some additional money were provided you could bring all the services up to date. Do you recommend such increase?

Colonel MARTZ. In regard to headstones, the amount we have requested will bring us up to date by the end of fiscal 1955.

Mr. CANNON. There would be no lag in any of your services?

Colonel MARTZ. Not in that respect. Insofar as funds for maintenance and operation of the cemeteries are concerned, I believe in General Hastings' opening statement he pointed out that the funds we have requested for our maintenance and operation is a bare minimum. We have found it necessary to instruct our cemetery superintendents as to a priority of work that should be done in the cemeteries so that we are sure if he has more work than he can do with the labor force provided, that he does first things first, that is, takes care of interments first, and the edging of grass along the road last.

Mr. CANNON. If you should find it necessary to make an arbitrary reduction in your appropriation, as for example, might be made necessary by some amendment on the floor making a percentage reduction clear across the board, where would you make it in your service?

Colonel MARTZ. That would be most difficult, sir. Probably we would have to eliminate some of the service we have furnished. We would have to allow the condition of the cemeteries to deteriorate below the standards we are now attempting to maintain. Insofar as our new construction projects are concerned, we feel that each of these has been very carefully screened, and if any of these have to be cut out it would be deferring to a later date something we need urgently at the present time. Most of these construction projects are needed for burial purposes, and offhand I would have difficulty saying which cemetery we were going to cut back on. Most of these plans are based on a 5-year program. In submitting a request for the construction and development of new cemetery areas, we have found it more economical to improve a large enough area to give us facilities for the succeeding 5 years, and that is why most of these projects have been presented in that way, to give us a 5-year program in that particular cemetery so that we do not have to come back every year and discuss 20 cemeteries in which we do just enough work to keep us going 1 more year.

Mr. CANNON. If such reduction were arbitrarily imposed, to what extent would you eventually have to make it up? As to maintenance of the cemetery, the appearance, cutting of grass and so forth, those services would not have to be made up in the future; but if it reduced the number of stones, that would have to be eventually brought up to date. To what extent would you say any reduction in the budget request this morning would eventually have to be returned in some future appropriation?

Colonel MARTZ. I would say most of it would have to again appear in subsequent appropriation requests. A few small items might not recur, such as if the grass were mowed once a month instead of once a week, and we would just have to live with the people who live in that area until we could mow it more frequently; but most of our items here would have to appear in later budgets and most of them would cost more than if we did them at the present time. For example, if we expanded 2 acres in a certain cemetery every year, it would cost more than if we expanded 10 acres at one time insofar as construction cost is concerned.

Mr. CANNON. If these cemeteries gradually expand, is there land available for expansion?

Colonel MARTZ. Not in all of them. We have, of course, some of our older cemeteries which were originally Civil War burials that are closed to further burials and we have nothing there but a caretaker.

Mr. CANNON. The only service in such cemeteries is maintenance?

Colonel MARTZ. That is correct, sir.

Mr. CANNON. But you will not be hampered in most of these cemeteries by the need of additional land?

Colonel MARTZ. That is correct. In each of the cemeteries we discussed this morning, we have a substantial amount of land that was procured in prior years and incorporated within the bounds of the cemeteries.

Mr. RABAUT. Are most of these cemeteries of a nature where they have a mound over the grave?

Colonel MARTZ. No, sir; they are not. The most economical practice in cemeteries is to have the grave absolutely flat so that it can be mowed with power equipment.

Mr. RABAUT. I have noticed that in private cemeteries, and that is why I asked the question.

FORT LOGAN NATIONAL CEMETERY

In Fort Logan Cemetery, how many burials did you have in that cemetery last year?

Colonel MARTZ. During the last year at Fort Logan we had 119 interments plus 42 reservations for other members of the family. That is due to the fact that the cemetery is new. Up until 1950 it was an old post cemetery in which there were just a few burials over many years. Now the interest of the local veteran population is increasing and we anticipate a considerable increase in the rate of burials, particularly as we get the cemetery developed to the point where they will prefer to be buried there.

Mr. RABAUT. You made reference to the purchase of a grave-digging machine. What is the cost of those machines and what do they do?

Colonel MARTZ. These machines vary in cost from $4,000 to $10,000. The most popular type is really an attachment that can be put on a small farm-type tractor.

REQUEST OF BUDGET BUREAU FOR MAINTENANCE AND OPERATION

Mr. RABAUT. How much money did you ask the Bureau of the Budget for for maintenance and operation of these cemeteries?

Colonel MARTZ. The total amount for maintenance and operation was $655,000.

Mr. RABAUT. How much were you allowed?

Colonel MARTZ. I misunderstood you, sir. That is the amount we are asking here.

Mr. RABAUT. I asked how much did you ask the Bureau of the Budget for?

Colonel MARTZ. We asked for $718,000, which was reduced by $63,000 to the $655,000 which we are now presenting to this committee.

Mr. RABAUT. That, I would say, is no greater a reduction than made in other requests made before the Bureau of the Budget.

Colonel MARTZ. No, sir; I think not.

RESERVATION OF BURIAL LOTS

Mr. RABAUT. You said you had requests for additional family rights to bury in national cemeteries.

Colonel MARTZ. Yes, we have many requests, where a veteran dies, that a grave be reserved for another member of the family. If a veteran's wife dies and he wants her buried in a national cemetery, he may do so provided he signs a statement that he at the time of his death will be buried in the national cemetery with her.

Mr. RABAUT. But at the time of his death if the wife is living she may ask for a reservation?

Colonel MARTZ. Yes.

ALLOWANCES FOR BURIALS IN PRIVATE CEMETERIES

Mr. RILEY. Colonel, if a veteran is buried in a private cemetery, do you take care of the expenses or make any contribution to the expenses of that burial?

Colonel MARTZ. In the case of a veteran, no. In that case the allowance comes from the Veterans' Administration. If a man is on active duty we do make an allowance to cover the basic cost of a funeral. This, of course, is not in our cemeterial budget. It is in our military appropriations budget. But we do make a nominal allowance to a family for a man who is in service. If he is a veteran, he gets an allowance from the Veterans' Administration.

RATE OF BURIALS

Mr. RILEY. What is your average daily rate of burials over the whole country?

Colonel MARTZ. May I furnish that for the record? We have it here but in order not to take the time of the committee I would like to furnish that for the record.

Mr. RILEY. Yes.

(The matter referred to follows:)

Cemetery	Annual interments, fiscal year 1953	Estimated annual interments, fiscal year 1955
ARMY AREA I		
Beverly, N. J.	871	1,065
Cypress Hills, N. Y.	167	210
Finns Point, N. J.	0	0
Long Island, N. Y.	3,735	4,600
Woodlawn, N. Y.	40	45
ARMY AREA II		
Annapolis, Md.	18	25
Balls Bluff, Va.	0	0
Baltimore, Md.	696	870
Camp Nelson, Ky.	44	45
Cave Hill, Ky.	1	5
City Point, Va.	5	10
Cold Harbor, Va.	0	0
Culpeper, Va.	5	5
Danville, Ky.	0	0
Danville, Va.	10	20
Fort Harrison, Va.	0	5
Glendale, Va.	0	5
Grafton, W. Va.	21	20
Hampton, Va.	158	250
Lebanon, Ky.	8	10
Lexington, Ky.	0	0
Loudon Park, Md.	6	10
Mill Springs, Ky.	7	10
Perryville, Ky.	0	0
Philadelphia, Pa.	26	40
Richmond, Va.	63	80
Seven Pines, Va.	0	5
Staunton, Va.	3	5
Winchester, Va.	14	20
Zachary Taylor, Ky.	373	450
ARMY AREA III		
Andersonville, Ga.	15	45
Barrancas, Fla.	125	145
Beaufort, S. C.	23	25
Chattanooga, Tenn.	137	200
Corinth, Miss.	2	10
Florence, S. C.	8	15
Knoxville, Tenn.	71	100
Marietta, Ga.	105	130
Memphis, Tenn.	196	240
Mobile, Ala.	79	105
Nashville, Tenn.	120	130
Natchez, Miss.	13	15
New Bern, N. C.	28	45
Raleigh, N. C.	24	30
Salisbury, N. C.	18	25
St. Augustine, Fla.	4	5
Wilmington, N. C.	19	35
ARMY AREA IV		
Alexandria, La.	51	75
Baton Rouge, La.	71	105
Fayetteville, Ark.	26	35
Fort Bliss, Tex.	224	305
Fort Gibson, Okla.	42	75
Fort Sam Houston, Tex.	563	705
Fort Smith, Ark.	31	45
Little Rock, Ark.	114	150
Port Hudson, La.	1	5
San Antonio, Tex.	11	10
Santa Fe, N. Mex.	71	75
ARMY AREA V		
Alton, Ill.	9	15
Black Hills, S. Dak.	70	80
Camp Butler, Ill.	76	85
Crown Hill, Ind.	0	0
Fort Leavenworth, Kans.	184	220
Fort Logan, Colo.	113	140
Fort McPherson, Nebr.	19	25
Fort Scott, Kans.	22	40
Fort Snelling, Minn.	998	1,150
Jefferson Barracks, Mo.	727	880
Jefferson City, Mo.	13	15
Keokuk, Iowa.	25	35
Mound City, Ill.	24	30
New Albany, Ind.	46	90
Quincy, Ill.	2	5
Rock Island, Ill.	96	145
Springfield, Mo.	65	85
ARMY AREA VI		
Fort Rosecrans, Calif.	863	1,130
Golden Gate, Calif.	2,590	3,120
San Francisco, Calif.	153	230
Willamette, Oreg.	546	695
ARMY AREA MDW		
Alexandria, Va.	5	10
Arlington, Va.	2,787	3,320
Soldiers Home, D. C.	77	130
TERRITORIES		
National Memorial Cemetery of Pacific	152	220
Puerto Rico	183	245
Sitka, Alaska	3	5
Total	18,311	22,840

The average daily burial rate for the national cemetery system in the fiscal year 1953 was 73. In the fiscal year 1955 it is estimated to be 91.

TAXES AND ASSESSMENTS

Mr. RILEY. I note on page 21 the estimate for fiscal year 1955 for taxes and assessments is some $10,000 more than for fiscal year 1954. What is the reason for that?

Colonel MARTZ. That is due to the increase in rates under the Federal Insurance Contribution Act. The rates have been changed.

Mr. RILEY. That is social security for the employees?

Colonel MARTZ. Yes, for our portion of the contributions.

CONFEDERATE CEMETERIES

Mr. RILEY. I note that you maintain seven Confederate cemeteries or plots. Will you give the location of those?

Colonel MARTZ. The seven Confederate cemeteries which we are maintaining at the present time are—Camp Chase, Columbus, Ohio; North Alton, Alton, Ill.; The Confederate Stockade, Sandusky Bay, Ohio; Point Lookout, Saint Marys County, Md; Rock Island at Rock Island Arsenal, Ill.; and two plots within private cemeteries, one known as the Confederate Mound in Chicago, and the other at Crown Hill, Indianapolis, Ind.

Mr. RILEY. I have had occasion to go to a number of funerals at national cemeteries, as a matter of fact I attended one yesterday, and I want to commend you for the understanding and sympathetic manner in which those funerals are conducted and the courtesies extended to the family. They are not elaborate but they are fully adequate, and I think you should be commended for it.

TENTATIVE PLANNING FOR 1957

Mr. DAVIS. Will you submit for the record a statement on the tentative planning program for fiscal year 1957?

(The matter referred to follows:)

Tentative planning program for fiscal year 1957 as of July 17, 1953

Cemetery	Projects	Preliminary estimated cost	Advance planning
Andersonville, Ga	New service building; entrance gates; landscape 5 acres.	$59,605	$1,201
Arlington, Va	Completion of development of 32 acres	101,785	1,890
Beverly, N. J	Assembly area	41,300	866
Chattanooga, Tenn	Road network and drainage	264,000	3,993
Fort Leavenworth, Kans	Development of 5.15 acres	113,600	2,104
Fort Sam Houston, Tex	Underpinning lodge; water and landscape 19.6 acres.	64,700	1,295
Fort Scott, Kans	Assembly area	43,700	912
Golden Gate, Calif	Completion of service building area	85,000	1,594
	Relocation of fence on north boundary	50,800	1,042
Jefferson Barracks, Mo	Landscaping 18 acres	9,600	211
Long Island, N. Y	Development of 68.6 acres	253,425	3,756
Memphis, Tenn	Rehabilitation of and additional storm drains.	30,600	641
Mill Springs, Ky	Addition to garage	3,500	70
Rock Island, Ill	Landscaping 5 acres	2,720	65
Woodlawn, N. Y	Drainage of burial area	16,900	360
Total		1,139,235	20,000

The above projects are subject to deferral or revision as may be required in order to include projects of greater urgency arising during the interim period.

THURSDAY, JANUARY 14, 1954.

UNITED STATES SOLDIERS' HOME

WITNESSES

GEN. WADE H. HAISLIP, GOVERNOR

Amounts available for appropriation

	1953 actual	1954 estimate	1955 estimate
Unappropriated balance brought forward	$39,305,062	$48,304,678	$56,869,678
Receipts placed in holding fund account:			
Stoppages, fines, and forfeitures	9,496,314	9,976,000	9,976,000
Estates of deceased soldiers	23,903	24,000	24,000
Withheld pay	1,632,461	1,675,000	1,675,000
Interest credited	1,258,198	1,500,000	1,650,000
Other	45,636	50,000	50,000
Total available for appropriation	51,761,574	61,529,678	70,244,678
Deduct appropriation or estimate:			
Maintenance and operation, United States Soldiers' Home	3,452,000	4,655,000	5,134,000
Soldiers' Home permanent fund	4,896	5,000	5,000
Balance carried forward	48,304,678	56,869,678	65,105,678

Amounts available for obligation

	1953 actual	1954 estimate	1955 estimate
Appropriation or estimate	$3,452,000	$4,655,000	$5,134,000
Prior year balance available	5,000,468	1,062,684	81,800
Total available for obligation	8,452,468	5,717,684	5,215,800
Balance available in subsequent year	−1,062,684	−81,800	
Unobligated balance, estimated savings	−33,254	−73,982	
Obligations incurred	7,356,530	5,561,902	5,215,800

Obligations by activities

Description	1953 actual	1954 estimate	1955 estimate
1. Medical care	$1,242,372	$1,547,455	$1,614,020
2. Domiciliary care	942,142	764,941	713,939
3. Administration and central services	1,315,400	1,428,707	1,522,041
4. Permanent improvements	3,856,616	1,820,799	1,365,800
Obligations incurred	7,356,530	5,561,902	5,215,800

Obligations by objects

Object classification	1953 actual	1954 estimate	1955 estimate
UNITED STATES SOLDIERS' HOME			
Total number of permanent positions	681	926	931
Full-time equivalent of all other positions	44	45	42
Average number of all employees	725	854	969
Average salaries and grades:			
General schedule grades:			
Average salary	$3,167	$3,080	$3,080
Average grade	GS-3.3	GS-3.1	GS-3.1
Crafts, protective, and custodial grades:			
Average salary	$2,807	$2,723	$2,725
Average grade	CPC-3.5	CPC-3.4	CPC-3.4
Ungraded positions: Average salary	$926	$828	$828
01 Personal services:			
Permanent positions	$1,765,494	$2,062,264	$2,305,035
Other positions	70,535	74,962	73,610
Regular pay in excess of 52-week base	4,374	8,354	8,967
Payment above basic rates	46,364	39,406	73,872
Total personal services	1,886,767	2,184,986	2,461,484
02 Travel	4,587	3,795	4,147
03 Transportation of things	1,458	3,290	2,190
04 Communication services	4,482	8,880	11,365
05 Rents and utility services	38,703	66,870	95,306
06 Printing and reproduction	1,708	2,355	2,995
07 Other contractual services	401,929	401,676	467,359
08 Supplies and materials	812,302	908,208	943,037
09 Equipment	545,609	369,678	92,643
10 Lands and structures	1,527	177,000	43,500
11 Grants, subsidies, and contributions	5,062	7,001	6,360
Subtotal	3,704,134	4,133,739	4,130,386
Deduct charges for quarters, subsistence, and laundry	203,728	215,636	236,886
Obligations incurred	3,500,406	3,918,103	3,893,500
ALLOCATION TO CORPS OF ENGINEERS DEPARTMENT OF THE ARMY			
Total number of permanent positions	52	13	18
Average number of all employees	50	12	17
Average salaries and grades:			
General schedule grades:			
Average salary	$4,224	$4,900	$4,835
Average grade	GS-5.8	GS-7.3	GS-7.2
01 Personal services:			
Permanent positions	$209,588	$52,797	$76,309
Regular pay in excess of 52-week base	805	203	291
Total personal services	210,393	53,000	76,600
02 Travel	103		
03 Transportation of things	2		
05 Rents and utility services	929	1,500	2,100
06 Printing and reproduction		7,900	6,900
07 Other contractual services	38,152	82,399	65,700
Services performed by other agencies	8,945		
08 Supplies and materials	275		
09 Equipment	540		
10 Lands and structures	3,596,785	1,499,000	1,171,000
Obligations incurred	3,856,124	1,643,799	1,322,300
SUMMARY			
Total number of permanent positions	733	939	949
Full-time equivalent of all other positions	44	45	42
Average number of all employees	775	866	986
Average salaries and grades:			
General schedule grades:			
Average salary	$3,362	$3,149	$3,170
Average grade	GS-3.8	GS-3.2	GS-3.3
Crafts, protective, and custodial grades:			
Average salary	$2,807	$2,723	$2,725
Average grade	CPC-3.5	CPC-3.4	CPC-3.4
Ungraded positions: Average salary	$926	$828	$828

Obligations by objects—Continued

Object classification	1953 actual	1954 estimate	1955 estimate
SUMMARY—continued			
01 Personal services:			
Permanent positions	$1,975,082	$2,115,061	$2,381,344
Other positions	70,535	74,962	73,610
Regular pay in excess of 52-week base	5,179	8,557	9,258
Payment above basic rates	46,364	39,406	73,872
Total personal services	2,097,160	2,237,986	2,538,084
02 Travel	4,690	3,795	4,147
03 Transportation of things	1,460	3,290	2,190
04 Communication services	4,482	8,880	11,365
05 Rents and utility services	39,632	68,370	97,406
06 Printing and reproduction	1,708	10,255	9,895
07 Other contractual services	440,081	484,075	533,059
Services performed by other agencies	8,945		
08 Supplies and materials	812,577	908,208	943,037
09 Equipment	546,149	369,678	92,643
10 Lands and structures	3,598,312	1,676,000	1,214,500
11 Grants, subsidies, and contributions	5,062	7,001	6,360
Subtotal	7,560,258	5,777,538	5,452,686
Deduct charges for quarters, subsistence, and laundry	203,728	215,636	236,886
Obligations incurred	7,356,530	5,561,902	5,215,800

Analysis of expenditures

	1953 actual	1954 estimate	1955 estimate
Unliquidated obligations, start of year	$4,982,289	$4,349,549	$1,428,052
Obligations incurred during the year	7,356,530	5,561,902	5,215,800
	12,338,819	9,911,451	6,643,852
Deduct unliquidated obligations, end of year	4,349,549	1,428,052	1,434,486
Total expenditures	7,989,270	8,483,399	5,209,366
Expenditures are distributed as follows:			
Out of current authorizations	7,989,270	4,859,439	3,784,688
Out of prior authorizations		3,623,960	1,424,678

Mr. DAVIS. General Haislip, we are pleased to have you before the committee again this year and I am sure all of us recall with pleasure the very fine statement that you presented to the committee last year. If you have a statement in support of your request this year, we will be glad to hear it at this time.

GENERAL STATEMENT

General HAISLIP. I have been the Governor of the United States Soldiers' Home for almost 2½ years and my pride in being associated with this fine establishment has steadily increased since my appointment. Therefore, it is with pleasure that I appear before you today to justify our request for funds to operate the home for fiscal year 1955.

By remaining an honorable and comfortable refuge for the old, invalid, and disabled soldiers of the Regular Army and Air Force of the United States who have faithfully served their country in peace as well as war, the home stands as a considerable morale factor to the career soldier. He feels, on entrance, a pride which comes from personal contribution to a home which will afford him comfort and medical care for the remainder of his life. He finds, after entrance, that he has become a member of a self-respecting community and is among men whose service in the Regular Army and Air Force has developed

similar habits of living and outlook and that there is a community of interest that is unique. He is doubly proud that the cost of his home is not a burden on the taxpayer or the community.

This distinct community of interest, as well as security in old age, has been a factor in the encouragement of service in the Regular Army and Air Force. Such encouragement appears to be needed at the present time, certainly insofar as the Army is concerned. In his semiannual report for the period January 1 to June 30, 1953, the Secretary of the Army states in part as follows:

> It is a disturbing fact that the Army is finding it increasingly difficult to attract and hold career soldiers, a situation which could have grave consequences. Remedial action is vitally necessary if we are to be assured in the future of the type of military leadership we now have and which is indispensable to our national safety.
>
> Despite a vigorous reenlistment program, for example, the 1953 reenlistment rate in the Regular Army was only half of even the modest percentage we had anticipated, although there was a substantial increase during the last 2 months of the year. This means that a large number of the trained and experienced noncommissioned officers upon whose continued leadership we had counted heavily were lost to the career service.

The total membership of the home on December 31, 1953, was 1,556. The home was filled to capacity and there was a waiting list of 238. The average age of the members is 65 years and most of them are disabled to some degree because of age, wounds, disease, or other infirmities.

Membership is confined to former warrant officers and enlisted men who have had some service in the Regular Army or Regular Air Force. In addition, membership is limited to:

1. Those who have served honestly and faithfully 20 years or more.
2. Those of less than 20 years' service who are rendered incapable of earning their own livelihood by reason of disease or wounds incurred in the military service of the United States, in line of duty and not the result of their own misconduct.
3. Those of less than 20 years' service who have served during any war or military operation in which their lives were hazarded, or who have contributed, except through fines and forfeitures, to the support of the United States Soldiers' Home, and who, by reason of wounds, sickness, old age, or other disability incurred after enlistment or aggravated by military service, are unable to earn their own livelihood.

It has been determined, by the administrative authorities concerned, that all laws and regulations applicable to personnel of the United States Army, in relation to the Soldiers' Home, are equally applicable to personnel of the United States Air Force.

Appropriations for the maintenance and operation of the home are not made from the general fund of the Treasury, but are made from the Soldiers' Home permanent fund, which is a trust fund. While the home budget appears as part of the President's budget, it is not included in the total of that budget. The establishment of a home to care for old and disabled soldiers was apparently first brought up in Congress in 1829 and a report by the Committee on Military Affairs of the House of Representatives favored the establishment of such a home and stated that it was to be "without cost to the Government." In 1841, the matter was again reported on by the same committee which favored a "plan which imposes no additional burden on the community." Still again in 1845 and 1846 we find favorable reports, the one stating "without calling for the appropriation of a single

dollar" and the other "that it does not ask any contributions of the Treasury of the Government." Finally, the act of 1851 established the home and provided that it would be financed, not from the general revenues of the Treasury, but by a trust fund built up from other sources, the principal ones now being:

1. A monthly contribution made by each enlisted member of the Regular Army and Regular Air Force.

2. Fines and forfeitures which are imposed upon soldiers and airmen of the Regular forces by sentence of courts-martial.

3. Interest of 3 percent on the permanent fund deposited in the United States Treasury which is credited to the fund by the Treasurer of the United States.

As recently as 1940, a report of a subcommittee of the Committee on Military Affairs of the Senate contained the following statement:

> Your committee are of the opinion that the whole legislative idea of the National Soldiers' Home was so well and so carefully worked out by our ancestors specifically in the acts of 1851 and 1883, that it is believed that even in the light of present-day changes throughout the world it would be difficult indeed to improve upon the statutory provisions made for the comfort, care, and protection of the members.

The United States Soldiers' Home, while listed in the Congressional Directory as an independent establishment of the Government, is, in reality, a congressional trust and makes a report of its activities annually to the Congress. Included in this report is a report by the Inspector General of the Army who, by law, is required to make an annual inspection of the home and report the results to the Congress. It is pertinent to quote an extract from his last inspection report dated October 1, 1953:

> The mission of the United States Soldiers' Home (USSH) of providing care for certain old, invalid, or disabled soldiers and airmen was being performed in a manner which resulted in remarkable contentment and satisfaction among the members. All facilities and administrative procedures were pointed to the safety, comfort, and well-being of the individual.

The permanent fund on October 31, 1953, amounted to $49,645,-746.41. The fund has been greatly augmented during the past decade because of the great increases in the strengths and activities of the Regular Army and Regular Air Force over our peacetime experience. Of the three principal sources of income already mentioned, the interest payments on the fund and the contributions by enlisted men have held fairly constant for a number of years. However, the third source, the fines and forfeitures imposed on soldiers and airmen of the Regular forces by sentence of courts-martial, has increased at an accelerated rate because of the many difficult personal problems arising from the continued worldwide deployment of our Armed Forces and especially because of the combat in Korea.

Prior to the buildup in Korea, annual income from fines and forfeitures averaged somewhere around $5 million. In fiscal year 1952 it grew to $7,500,000 and in fiscal year 1953 reached the amazing and distressing total of over $9 million.

Now that conditions of service are improving and with combat halted, I am confident that fines and forfeitures will drop back to between $5 million and $6 million or a figure comparable to the annual total just prior to the buildup in Korea.

It should be noted that the increase of the fund beyond immediate requirements is building a healthy reserve to meet increased future demands resulting from the greater number of soldiers and airmen

who will become eligible for admission to the home because of World War II and Korea. This augmented fund gives assurance that the home can continue to be conducted without cost to the taxpayer. In this connection, it might be well to mention that Congress in 1908 did away with the monthly deductions as it appeared that remaining sources would provide adequate funds for the support of the home. This proved to be a mistake, as the annual income after World War I began to decline steadily until, in 1935, it reached a point where the Congress felt it necessary to restore the monthly deductions in order to again build up the fund. The act of February 13, 1936, reestablished the monthly deduction to a maximum of 25 cents per month, but provided that within that limit, the exact amount would be fixed by the Secretary of the Army. Since January 1, 1943, the amount has been fixed at 10 cents per month.

The purpose of again bringing the above information to the attention of this committee is the fact that, notwithstanding the findings of the Senate committee and the further findings of the Hoover Commission which recommended that the Soldiers' Home be left alone, the membership of the home has been seriously disturbed and much concerned during recent years by periodic agitation for changes in the financial and operational structure of the United States Soldiers' Home.

So far as I am able to learn, no one has ever suggested that proposed changes would effect economies in operation, would increase efficiency, or would improve the morale and welfare of the members of the home.

Funds provided to operate the home during fiscal year 1954 made provision for an average member load of 1,556 including a daily average of 360 patients in the hospital, and provides for an average of 854 employees, of which 371 are required to staff the hospital. The estimates for fiscal year 1955 are based on an average member load of 1,732, an increase of 176, including a daily average of 400 patients in the hospital, an increase of 40. It also provides for an average of 969 employees, of which an average of 453 will be required to staff the hospital. This represents an increase of 115 employee-years, 82 of which are required by the new addition to the hospital.

The medical service is one of the most important activities of the home as experience indicates that the patient load of the hospital will vary between 20 and 25 percent of the membership of the home. There has been a steady improvement in the medical services of the home. The affiliation of the home hospital with the Army Medical Center in the training of medical residents and interns has continued to raise the standard of care and treatment of patients. The provision of social and recreational workers for the hospital has added much to the comfort and morale of patients, many of whom will spend the remainder of their lives in the hospital. At the request of the home, the management experts of the Office of the Surgeon General of the Army made an extensive survey of the hospital last spring. As a result a number of improvements have been made in the organization and administration of the hospital.

I would like to call your attention again to the fact that the request for fiscal year 1955 of $5,134,000 now being considered by this committee is not included in the total of the President's budget. As has been stated already, funds appropriated by the Congress for operation of the home are taken from the Soldiers' Home permanent fund, which is a trust fund, and not from the general fund of the Treasury.

When I appeared before this committee last year to defend our estimates for the fiscal year 1954, I stated that I expected the new domiciliary building to be completed and ready for occupancy on the 1st of August 1953. I regret to have to report to the committee that we have not yet occupied the new building and do not expect to be able to move into it prior to March 1 of this year. A series of strikes last summer and fall set back the completion date, and delays in receipt of certain equipment and supplies setback the date still further. I may say that the committee provided funds for the operation of the new building from August 1, 1953. Because of the delay, I have already turned in savings amounting to $73,982 and our estimated obligations for fiscal year 1954 as shown in the budget now before you have been reduced by this amount. I will turn back all additional savings to the permanent fund of the home as I intend to adhere strictly to the purposes for which the funds were provided and will not use them for any other purpose.

I also stated last year that the Corps of Engineers had set the date for beneficial occupancy of the new 210-bed nursing unit as an addition to the hospital for March 20, 1954. While construction is slightly ahead of schedule, I still believe that that date is a safe and proper one. I have a table for the record showing the new membership capacity of the home after occupancy of the new buildings. The table shows a net gain of 318 in the domiciliary area and 71 in the hospital area.

(The matter referred to follows.)

Member capacity after occupancy of new buildings about Mar. 20, 1954

Location	Present capacity	Losses for overcrowding, basements, and closing old barracks	Future capacity
DOMICILIARY AREA			
North gate	2	0	2
General storehouse	1	0	1
Anderson Cottage	22	0	22
Detention barracks	19	+5	24
Grant Building	290	−62	228
King Building	237	−237	0
Scott Building	222	−20	202
Sherman Building	170	−12	158
Stanley Hall	14	−14	0
Sheridan Building	168	−168	0
Garage	5	−3	2
Subtotal	1,150	−511	639
Beds in new domiciliary building			849
Total			1,488
Less 20 beds (mess personnel)			−20
Total beds available (future)			1,468
Present capacity in barracks			1,150
Available for increase (domiciliary)			318
HOSPITAL AREA			
Present buildings	371	−139	232
Beds in new hospital ward wing			210
Total beds available (future)			[1] 442
Present normal capacity in hospital			371
Available for increase (hospital)			71
Future member capacity			1,910
Present member capacity	1,521		1,521
Available for overall increase			389

[1] 50 additional beds are available in the hospital area for isolation purposes, contagious diseases, and epidemics. These are reserve beds.

General HAISLIP. In presenting the 1955 budget estimates to the committee for their consideration, attention is invited to the fact that the estimates amounting to $5,134,000 exceed the amount appropriated for the fiscal year 1954 by $479,000. By obligation, fiscal year 1955 is $346,102 less than fiscal year 1954. However, if we leave out capital improvements, we find that the cost of day-to-day operation for fiscal year 1955 is $321,900 greater than for fiscal year 1954. This increase is due largely to the fact that operation of the new buildings is on a 12-month basis for fiscal year 1955 and on a part year for fiscal year 1954. The major increases and decreases in day-to-day operation in fiscal year 1955 estimates compared with fiscal year 1954 are as follows:

1. Personal services: There is a net increase in this category of $255,248 which is due almost entirely to provision on a 12-months basis of the additional employees authorized for a part year in fiscal year 1954 to staff the new domiciliary building and the new hospital ward wing and to increase the number of present positions generally in housekeeping and maintenance categories required by the new buildings and the increased member load. In addition, three positions are requested for the expanding powerhouse and one member position in the clothing storehouse.

2. Rents and utility services: The increase of $28,436 is due almost entirely to the net additional electric current required for the operation of the new buildings for the full year 1955.

3. Other contractual services: A net increase of $17,970 is due to recurring items such as maintenance contracts for the full year 1955, and for painting and roof repair. Due to the increased member load and occupation of new buildings for a full year, there are increases in payment to nurses, Army hospitals, contracts for dentures and spectacles. Increases are reduced due to a lower level of normal maintenance activity in fiscal year 1955.

4. Supplies and materials: Increases for this object classification amount to $34,829 and are primarily due to request for rations for the increased member load for a full year, The remaining increases are due to the necessary purchases of supplies heretofore furnished from surplus stocks now exhausted and for increased cost and use of supplies.

5. Equipment: Purchase of normal replacements is reduced by $16,319 in fiscal year 1955.

6. Miscellaneous: There are small increases and decreases resulting in a net increase of $1,736 in other normal operational activities.

A comparison of funds for capital improvements shows a total increase of $231,082. Major increases and decreases for this purpose are as follows:

1. Other contractual services: During the fiscal year 1955 we hope to accomplish a number of maintenance projects which are $77,713 in excess of the major maintenance activities for which funds were appropriated in fiscal year 1954. These include replacing the present cobblestone gutters with cement curbs and gutters, grading the hospital courtyard, replacing dangerous electric wiring in various buildings, installing street lighting standards in the hospital area, renovation of the heating system and replacement of the storm-water system in the Grant Building, and installing aluminum jacket coverings on pipes in the north tunnel. Not included in the fiscal

year 1955 estimates is $30,000 for moving personnel and equipment to the new buildings.

2. Equipment: Reducing the increases under capital improvements is a decrease of $46,631 in the purchase of equipment in fiscal year 1955. Funds for the purchase of the majority of the equipment for the new buildings have been provided in prior budgets. There are no funds for this purpose in fiscal year 1955.

3. Lands and structures: In view of the $230,000 increase under this object class, I would like to recall to the committee the fact that the Supplemental Appropriation Act, fiscal year 1951, appropriated from the permanent fund, United States Soldiers' Home, the sum of $12,750,000 to initiate the construction of the new United States Soldiers' Home to replace the present old and obsolete plant. The principal items provided for by this act were a new domiciliary building, a 210-bed nursing unit as an addition to the hospital, a nurses' home, renovation of the mess hall building, hospital, and renovation of the existing hospital-group buildings. The construction program started with the new domiciliary building and as construction progressed it was found that increases in construction and design costs but principally essential changes in the original plans absorbed into the domiciliary building and the 210-bed nursing unit practically all of the funds appropriated. There remain, therefore, no funds for the nurses' home, the renovation of the mess hall building, hospital, or the renovation of the existing hospital-group buildings, all of which are essential projects which must be constructed as soon as funds can be obtained. The additional funds required are $1,147,985 which will complete the original program, including increases in costs of construction and design and an accurate cost estimate prepared by engineers from the office of the division engineer, North Atlantic division, New York City. It should be noted that the $318,000 originally set up for the nurses' home has now grown to $477,500 as a result of competitive bids submitted by reputable contractors. The renovation of existing hospital-group buildings has increased from $313,000 originally set up to $606,366 because of increased costs of construction and design, and particularly because we now have an accurate cost estimate based on firm plans developed by the district engineer and the architect and approved by the division engineer, North Atlantic division, New York City, and home authorities.

The breakdown of the amount of $1,284,000 for permanent improvements to the home is as follows:

(*a*) New nurses' home	$477,500
(*b*) Renovation of LaGarde, Forwood, and Barnes Annex Buildings, existing hospital	606,366

In order to modernize facilities built in 1906 and 1920 to provide adequate and economical patient care and medical facilities.

(*c*) Renovation of hospital mess	$64,119

These funds are necessary to supplement 1954 appropriations of $144,500 for this project. This supplemental amount was made necessary as a result of architect-engineer studies in cooperation with the Corps of Engineers to provide adequate mess facilities for the existing hospital and the new 210-bed ward wing.

(*d*) Street lighting, hospital area $88,000

To replace present antiquated lighting system and to provide modern street lighting in existing as well as the new hospital areas.

(*e*) Demolition of Barnes Building $28,015

This building was built in 1873. It has been condemned as unsuitable for further continued use. It is now being used for the housing of some patients on the second floor and civilian employees of the hospital, and it also contains 2 apartments occupied by 2 resident doctors and their families.

(*f*) Preliminary plans and sketches for a new service area $20,000

The capacity of this service area to be limited to that necessary for the institution as presently authorized.

Great improvement has been made through the years in the facilities of the home and there has been a comparable improvement in the character and behavior of the membership. Disciplinary problems are minor and the members have rightfully earned the respect of the neighboring community. On Christmas Day there was one member only undergoing disciplinary punishment. The members give generously to all worthy causes such as the Red Cross and the March of Dimes, and always exceed their quota to the Community Chest.

I would like to inform the committee that many improvements in organization and administration have been effected during the past fiscal year. In accordance with a directive of the Under Secretary of the Army, there was completed by recognized experts a further development of the master plan for the future development of the home. A copy of the plan was furnished the Bureau of the Budget in the hope that it would be accepted as a systematic and business-like method of seeking funds for further development. I regret to say that no comment was forthcoming from the Bureau of the Budget, although the home authorities and the district engineer who supervises our construction consider it a most excellent plan and one essential to systematic and economical expansion. As a matter of interest I am furnishing the committee a copy of the plan, but I would like to repeat that the plan has no Bureau of the Budget approval.

Within the limits of our maintenance funds, we were able to correct one-third of over 200 safety hazards developed in a safety survey made on home request by safety experts from the Office of the Chief of Engineers of the Army.

Through better organization, overtime payments to employees were reduced by 51 percent. Through the betterment of working conditions and a campaign to obtain a better class of employee, the turnover in civilian employees was reduced 42 percent.

Outside experts, principally from the Army, made, on home request, surveys of the hospital already mentioned, clothing specifications and clothing supply, the laundry, the canteen, and the library. District of Columbia traffic officials were of great assistance in the marking of our roads and crossways to reduce the chances of traffic accidents. The Metropolitan Fire Department, in addition to continuing its splendid cooperation in fire prevention, was extremely helpful in the drawing up of fire regulations for our new buildings.

The Metropolitan Police Department has continued its full and cheerful cooperation with the home authorities.

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When I appeared before this committee last year there was discussed the turning over to the General Services Administration of 156 acres of Soldiers' Home property on the south end of the reservation and the fair value of that land. Since that time the home has been notified that the land would be paid for at the rate of $12,000 an acre. On learning of this valuation the home requested the General Services Administration to justify what seemed to be a low price for the land. In our study we were assisted by the appraisers of the Office of the Chief of Engineers of the Army. We have had several friendly conferences with the General Services Administration and are still studying the matter in the hope of reaching an amicable agreement with them. At the moment the papers are in the hands of the Chief of Engineers of the Army.

In conclusion, I believe the American people can be well satisfied with the measures taken through the years by the Congress for the care of the old and disabled soldiers and airmen of the Regular forces, and I can assure the committee that continued effort is being made by the officials of the home to carry out the mission of the home efficiently and economically.

Mr. DAVIS. You have presented us with a very comprehensive and informative statement which certainly is a compliment to the kind of stewardship which you have given in the caring for the trust fund that has been set up for the maintenance of the institution of which you are Governor. It certainly speaks well for the kind of care which you have given to those who are entrusted to your care at the Soldiers' Home. I think your statement reveals that you have an eye out for the future to assure that this high standard of care will be continued and even improved in the years ahead. I think your statement reveals that kind of planning.

STATUS OF SOLDIERS' HOME TRUST FUND

I would like to ask you, General, to insert at this point in the record a statement which will show currently the status of the Soldiers' Home Trust Fund.

(The matter referred to follows:)

Status of Soldiers' Home permanent fund

Fiscal year	Balance beginning of fiscal year	Plus credits during fiscal year	Minus withdrawals during fiscal year	Balance end of fiscal year	Net increase (+) or net decrease (−)
1948	$22,001,350.72	$9,798,596.78	$2,454,715.08	$29,345,232.42	+$7,343,881.70
1949	29,345,232.42	8,550,306.56	2,537,801.73	35,357,737.25	+6,012,504.83
1950	35,357,737.25	6,968,026.82	2,690,285.44	39,635,478.63	+4,277,741.38
1951 [1]	39,635,478.63	7,930,945.90	10,947,601.60	36,618,822.93	−3,016,655.70
1952 [2]	36,618,822.93	9,662,867.11	6,976,628.20	39,305,061.84	+2,686,238.91
1953	39,305,061.84	12,456,512.00	3,456,896.00	48,304,677.84	+8,999,616.00
Total		55,367,255.17	29,063,928.05		+26,303,327.12

[1] Withdrawals include $8,547,795 of the $12,750,000 authorized for new construction. Balance includes $4,202,205 of the $12,750,000 for new construction

[2] Withdrawals include $4,202,205 which is the balance of the $12,750,000 authorized for new construction.

STATUS OF BUILDING PROGRAM

Mr. DAVIS. Will you briefly bring us up to date on your building program at Soldiers' Home?

General HAISLIP. Mr. Chairman, as you will recall, we hoped to finish the first increment of the new home with the $12,750,000 you gave us. We had certain definite objectives. As we proceeded with that construction, much to our regret, we found certain changes were necessary, changes in design, and those changes absorbed most of that amount in the new domiciliary building and the new annex to the hospital. So we have come in this year for something over $1 million to make up that deficiency and complete the first step in the new home. That will be a new domiciliary building, a new wing to the hospital, and a modernization of all the existing hospital buildings except the old Barnes Building, built in 1873, which is completely obsolete, has been condemned, and should be torn down. With the money we are requesting in these estimates, we will have a very firm basis on which to build in the future.

Mr. DAVIS. Has the definite decision been made that you will tear down the Barnes Building?

General HAISLIP. Yes. That was in our master plan and the Bureau of the Budget inserted money with which to do it.

Mr. DAVIS. Has that demolition job gotten underway?

General HAISLIP. No. We have to wait for the money. In these estimates the sum of $28,015 is included for demolition of the Barnes Building.

Mr. DAVIS. Can you give us the basis on which that estimate was made?

General HAISLIP. I was told by the District Engineer that the Bureau of the Budget talked to that office and asked for an estimate. They had two of the leading wrecking companies in this area look it over and that is their estimate of what it will cost.

Mr. HAND. Does that appear reasonable to you?

General HAISLIP. I do not know. I have to depend on the engineers for the cost of construction. They seemed to think it was reasonable.

LONG-RANGE CONSTRUCTION PROGRAM

Mr. DAVIS. Do you want, for our benefit, to project your overall long-range construction program on the record?

General HAISLIP. Mr. Chairman, when I went to the home I found we had a so-called master plan for the new Soldiers' Home which began with what we had and arrived at what we ought to have eventually, but there were no systematic steps as to how to proceed from one phase to another. There was no analysis or study of what the conditions should be to warrant going from one phase to another; and there was no accurate engineering guidance to make certain we would not do the job backwards. In other words, what we have today are these two beautiful new buildings about completed, and a powerplant running at a dangerous overpressure to heat them. In other words, we should have had the powerplant built before the buildings were built.

Now, we have had a further development of the master plan which gives us guidance and tells us the steps we should take and the order in which we should take them and the conditions which should exist in order to embark on them.

We submitted this plan to the Bureau of the Budget and hoped they would give it approval, but they made no comment on it. As a matter of interest, I have a copy I would like to leave with the committee with the understanding it does not have the approval of the Bureau of the Budget. The Engineers feel, and we feel, such a plan is essential to make certain we do the job properly and do not waste money.

EXPANSION OF NEW HOSPITAL WARD WING

Mr. DAVIS. One of the items in your planning, as I understand it, is the expansion of the new hospital ward wing. What is the status of that project?

General HAISLIP. We made a study of that project with the architect-engineer, and found that it would cost a lot more money than what we proposed to do in the Barnes Annex. It would run approximately $1 million while we were asking for about a quarter of that sum for the Barnes Annex job. We had a meeting with representatives of the Bureau of the Budget last week and the Director then arrived at a decision that we would proceed with the original plan and modernize the Barnes Annex. So I have revised my statement today and dropped those items out.

Mr. DAVIS. You told us that you had attempted to follow this overall master plan until a practical step-by-step program could be put into effect. What target date are you shooting at to have this program completed and your construction program brought up to date?

General HAISLIP. One trouble was, Mr. Chairman, that I could not establish in my mind any series of dates because it depends on conditions that may be independent of time, and that is one of the directives I gave to our planners, that they would state a series of conditions that would authorize our going ahead. So the plan has no time factor in it. I think our next problem is to build a modern service area for the servicing of the new home, and if we do that we will be able to take care of any of the new buildings or new activities that develop. That is our next step. Our experience that we will get on the new building will be helpful also in future planning.

In other words, the living conditions in this new building are far better than in the old ones. Some of these old buildings are from 75 to 100 years old, and some of the living conditions are not good. So I feel we should take the next step by building a new service area. The experience we will get in the next year or so with the new building will help us to tell when we ought to proceed with the other work.

Mr. DAVIS. Aside from this Barnes Building, which is mentioned in the schedule, are the rest of the buildings there in pretty good state of maintenance and repair at this time?

General HAISLIP. Yes. Of course, we have had to make certain essential repairs, like renewing the electric wiring, because the old wiring system was completely defective, and had to be replaced.

We have been keeping the buildings in fair shape, but they cannot be modernized, and eventually should come down. We will correct conditions in two of the old buildings, and put them in standby condition. We will take the members out of the basements and the attics, and so forth, where they are living now, and our plan prescribes, and I certainly agree with it, that when the conditions indicate it, we must build additional new dormitory buildings. We must be able to use the standby buildings to take care of new members coming in while the new construction is in process. Eventually the standby buildings should come down.

Mr. DAVIS. Of course the fact that so many of these buildings are very old does represent a considerable maintenance problem.

General HAISLIP. Yes, it certainly does, and we will be very happy when they finally go.

Mr. DAVIS. In spite of the fact that these buildings are old, and obsolete, have you been able to keep them in reasonable condition of safety and to avoid unreasonable safety hazards for the people there?

General HAISLIP. Yes, we have. We have had a survey made last year by experts from the Chief of the Army Engineers office and they made a very thorough study of the entire home, by day and by night, and made suggestions to us for the removal of safety hazards. We have been very busy in correcting those faults that they pointed out to us.

This year, our greatest problem now, is the Grant Building, a relatively modern structure, built in 1910. All of the interior piping is gone, the heating piping, the water piping, the storm gutter piping, and we have money in these estimates to replace them. It is a fine building, but the pipes were so bad that you could almost poke your fingers through them. That is the most pressing item that we have confronting us today.

Mr. DAVIS. You have made satisfactory progress, from your point of view, in putting into effect a safety program?

General HAISLIP. Yes.

Mr. DAVIS. That the Engineers recommend?

General HAISLIP. Yes, we have. We have been removing hazard on a program basis; every year we correct certain items. We have been putting in more street lighting, to take the place of the old obsolete lights. And we have been replacing the cobblestone gutters, which cost a lot to maintain, and which form a very insecure footing and invite accidents. We have been replacing the brick sidewalks. We have been marking our roads, painting our stairways, and we have put up rails which help the older men to get up and down the stairs. We have accomplished an enormous amount of work and I think we are getting along on a sure and reasonable basis with steady improvement all of the time. We are doing that with our small maintenance force whenever we can get them free to do that type of work. We have never felt that the situation was so critical that we should come in for a large sum of money and try to do the whole thing at once by contract. But every day we relieve some situation, and I think the safety of the home has greatly improved in the last 2 years; that does not prevent some of the older men from falling down and injuring themselves. That just cannot be helped.

REIMBURSEMENT FOR LAND TAKEN FOR OTHER GOVERNMENTAL PURPOSES

Mr. DAVIS. Last year we discussed with you, General Haislip, the taking of some of the land from the Soldiers' Home for other governmental purposes, the money to be added to the trust fund. I do not believe you had been compensated for that at that time. What is the development on that since you were here last year?

General HAISLIP. After considerable investigation, Mr. Chairman, we found out that back in 1951 the General Services Administration had made a deposit in the Treasury in payment for the center tract, on which there was to be built a veterans hospital. Last spring we discovered that a large sum of money had been deposited to the credit of our fund which we could not identify. Later it was determined that this sum was in payment for the veterans hospital tract at the rate of $12,000 an acre. We then immediately took up with the General Services Administration the question as to whether that was a fair price. After a great deal of correspondence and several meetings we were furnished with their records and papers on the appraisal of the tract, and through the kindness of the Chief of Engineers, we had his appraisal experts study these papers, and they came back and said they felt that $15,000 an acre was a fair price.

Well, we then again met with the General Services Administration people and while we were studying the whole matter, we got a warrant, about a month or so ago, in payment at the rate of $12,000 an acre for the new medical center. We have declined to accept that, and at the present time we have additional data furnished us by the General Services Administration and the Office of the Chief of Engineers is again studying the matter. We hope we can come to some amicable agreement.

I might say that the General Services Administration people are perfectly objective in the matter; they are perfectly willing to pay any price that is decided upon, and if we can show that the land is worth $15,000 an acre, rather than $12,000, I am sure they are willing to pay that to us. That is the situation at the present time, and it is a very live one.

Mr. DAVIS. We hope you will be able to report to us a year from now that the whole thing has been straightened out.

General HAISLIP. I hope so, Mr. Chairman.

RECEIPTS FOR TRUST FUND

Mr. HAND. Are all of the fines levied on the Army and Air Force for disciplinary actions paid into your fund?

General HAISLIP. No, only those which result from trials of regular soldiers and of the regular airmen. As a matter of fact, the Air Force is a regular force. They have never used the draft, so every man in the Air Force is a regular airman. In the Army, however, the regular strength, as I recall, has been something like 600,000. All of the men over that are in the service under the draft. We get nothing from them, and neither do they contribute anything to the home.

Mr. HAND. But all of the fines from the category of the personnel you have mentioned, all come to your fund?

General HAISLIP. That is right.

Mr. HAND. The fines from 1953, I observe, from your report, amounts to over $9 million.

General HAISLIP. That is right, that is due to the unusual circumstances of the Army deployed throughout the world——

Mr. HAND. Overseas and in combat.

General HAISLIP. Yes, and in combat, and everything else—families separated. Of course, the amount is up. I discussed that with the military justice office of the Judge Advocate General, and I am quite sure that amount will come back to what we might say as the normal, somewhere between $5 million and $6 million a year.

Mr. HAND. What is the balance in your permanent fund now?

General HAISLIP. $49,645,746.41 as of October 31, 1953.

Mr. HAND. Is there any sense to the suggestion that the principal of the money be otherwise used, or diverted from your use, put it in the Treasury for some other use?

General HAISLIP. Yes, that has been suggested.

Mr. HAND. You are getting awfully rich.

General HAISLIP. Yes, but also with the large additional forces we are building up a tremendous future liability.

Mr. HAND. That is right.

General HAISLIP. And we feel that this is a very painless way to do a very wonderful service.

Mr. HAND. Well, if the time should come when the funds should be diverted for other purposes, that time is not yet?

General HAISLIP. It does not seem to us that it is. Then again there is another question that the Congress may be asked to decide inside of 10 years, or so, and that is whether the Air Force should have an Airmen's Home. You see, they are tied in with us now, and at the present time out of a membership of some 1,500 they have 108 men in the home.

Mr. HAND. But under the present tendency, the present trend of military strategy, may in the long run result in their population being greater than that of the overall Army.

General HAISLIP. Yes, that might very well be, and we want to keep this fund so that when the time comes, if Congress decides in its wisdom that the airmen are to have a home of their own, then here will be the money readily available without coming to the Congress and asking for a considerable sum of money to build a home.

Mr. HAND. General, let me merely add to what the chairman has already said, that we are very pleased at your statement last year, and your equally good statement this year.

General HAISLIP. Thank you very much.

Mr. HAND. The pleasure of this committee is rather a unique one, to find before us a solvent fund that does not require a substantial appropriation from this committee.

General HAISLIP. I certainly feel that all of our men do feel very proud of the fact that they are not a drain on the taxpayers.

SALE OF LAND

Mr. RABAUT. General, I have always had a great interest in this home. You are making a proposal for two sales at the present time, is that correct?

General HAISLIP. Three. There are three tracts of land involved, one for the District of Columbia Medical Center.

Mr. RABAUT. Yes.

General HAISLIP. One for the veterans' hospital, and the third one is the project for the building of a new administration building for the Veterans' Administration to get it out of the center of town down near 15th and K Streets.

Mr. RABAUT. The question of price for the land is being debated.

General HAISLIP. Yes. According to the law we are entitled to a fair value for the land.

Mr. RABAUT. I feel that $15,000 an acre, if anything, is too low.

General HAISLIP. You think it is too low.

Mr. RABAUT. I think it is low, yes; I think you should get at least that for it.

General HAISLIP. That is what I think. But the appraisers feel, from the character of the land in that area, that it is more suitable for institutional purposes than for any other. If that is true, it means that it would not be suitable for real-estate development.

Mr. RABAUT. That is their opinion.

General HAISLIP. That is their opinion, that is true; they are of that opinion, but we feel that we are entitled to more than $12,000.

Mr. RABAUT. You have got some money in here for a proper heating plant.

General HAISLIP. No; you gave us money this year and we are now in the process of expanding our heating plant. It will be ready for next winter.

Mr. RABAUT. The new building will have adequate heating facilities?

General HAISLIP. It will provide for the entire facility and we will have enough reserve to take care of us for any emergency.

WOMEN PERSONNEL

Mr. RABAUT. Are you having any study made about the women personnel?

General HAISLIP. Yes. They are entitled to come in. We have an old building out there, Anderson cottage, a building in which Mr. Lincoln spent three summers during the Civil War; it was the summer White House. It has quite a large number of rooms. We are using it as barracks now, and what I want to do is to have some sort of a hostess house. These old men get sick, go to the hospital, and their wives are old. Many are in feeble health. They come to see their husbands, and they stay in town, ride out to the home on the streetcar. Of course it is a considerable distance out to the home. And I think we ought to have a hostess house where the wives can stay, at a reasonable charge, when they come to the city to see their husbands. So, along with the establishment of the hostess house

we could have certain rooms for the uniformed women who might want to enter the home.

Mr. RABAUT. You mean women who have been in the service?

General HAISLIP. Yes; when they become disabled, or when they have served for 20 years or longer.

Mr. RABAUT. Then you have got two purposes, one for women who have been in the service, and one for the women who come here to visit their husbands.

General HAISLIP. Yes. Many of these women find rooms in Washington, stay at the YWCA downtown, and come out on the streetcar, where they have to change once or twice in order to get out to the home.

Mr. RABAUT. How many visitors do you think there would be?

General HAISLIP. It is hard to tell. There are always some of them. We are going to have 400 men in the hospital next year. And it is hard to tell how many are going to have families come. Many of the men have no families. But there is a need for us to have, within limits, accommodations to take care of those people.

Mr. RABAUT. What is the capacity now of the old building?

General HAISLIP. We have our personnel office in part of it and 25 men. The cottage has 18 rooms. It is quite a sizable house. And we will be able to take the women there, and also take care of a limited number of the wives of the sick.

Mr. RABAUT. Is there anything in the original setup of this fund that would permit you under similar conditions to erect a building in another part of the country?

General HAISLIP. Yes, we are authorized to do that, and there was one at one time a branch home in Kentucky. We spent a good deal of money there, but it was found it did not work out, it was closed out and sold.

Mr. RABAUT. Well, it is in pretty good hands. You are making studies, you tell us, of this question.

General HAISLIP. Yes. Of course, it would be nice if we had some place for the people who suffer from asthma, and for people suffering from respiratory diseases. Some people might do better in a place like Arizona.

Mr. RABAUT. Yes.

General HAISLIP. But who have a hard time in the Washington climate.

ACREAGE IN TRACTS

Mr. RILEY. General, how many acres are involved in these three tracts?

General HAISLIP. 156 acres.

Mr. RILEY. To be sold or contemplated to be sold.

General HAISLIP. They were sold. The land no longer belongs to us; the General Services Administration holds title to it now.

Mr. RILEY. How many acres does that leave?

General HAISLIP. 302. What we turned over actually was largely the old dairy farm and chicken farm, and I must admit that that land was no longer being used for any profitable purpose, and yet I hated to see it go.

Mr. RILEY. You do not contemplate parting with any more of it, do you?

General HAISLIP. No; I think we can justify every acre remaining as being a definite need for the home. I do not feel in all honesty that we could justify having all of that acreage lying completely idle. So, while I hated to see it go from the sentimental point of view, I must admit that I could not have any valid objection to it, because we did not need it. We can build the new home on what we have left, and we will have an adequate home.

Mr. RILEY. It will not cramp your quarters?

General HAISLIP. No. The master plan will show that the future home will be a fine home, and it might under certain conditions, if Congress permits it, grow to a strength of between five and six thousand. But even with that strength we have adequate space now on what is left to provide a home and give the men a feeling of freedom, of trees and grass and a proper place for old people to be.

Mr. RILEY. The master plan covers the three hundred-odd acres that will be left.

General HAISLIP. Yes, that we have left.

Mr. RILEY. General, who comprised the appraisers that put this value on the land?

General HAISLIP. The General Services Administration, I think, has its own appraisers.

Mr. RILEY. But they are the purchasing party, to a certain extent.

General HAISLIP. Yes, and they had the public roads make an appraisal for them, independent of their own. The appraisers in the Chief of Engineer's Office took the records and facts that they had developed and built up a study themselves, not with the view of making another appraisal, but of determining in their own mind whether the General Services Administration had arrived at a proper figure. The funny thing about that is that the General Services Administration appraisers arrived at $15,000 an acre, and it is rather amazing that the public roads appraisers arrived at $8,000 an acre. They offered us $12,000 and we want to know why $12,000 instead of $15,000. We have not arrived at any conclusive figure yet.

Mr. RILEY. You have not had any appraisal of your own made?

General HAISLIP. No, we have not; we have no money for that purpose. The Chief of Engineers loaned us his people and they said they could make another appraisal for, I believe $3,500. We thought in view of the fact that this appraisal was as of the date 1950, that if these experts would take all of the records and study them they could determine, without making a new appraisal of their own, whether the figures arrived at would constitute a fair value 3 years back. This they did, and felt that $15,000 was a proper price.

Mr. RILEY. I was just wondering if there were not some way in which you could have had an appraisal made from the Washington Real Estate Board, to give you an appraisal for your own purpose. These people are more familiar with the subdivision, expansions that have taken place for residential purposes, and business purposes, and of business property than the Army engineers or the General Services Administration, in my opinion.

General HAISLIP. I think they are, but I think they would suggest——

Mr. RILEY. I think if you had an appraisal from them you would probably have a higher value, sufficient, perhaps, to pay for it.

General HAISLIP. The estimate of the cost was $3,500, but we do not have the money, unless we can get some from some other place.

Mr. RILEY. Whose estimate was that; the Army engineers?

General HAISLIP. Yes. They said that they thought that $15,000 was right; and the General Services Administration appraisers thought that——

Mr. RILEY. I was thinking about the cost of the appraisal.

General HAISLIP. Yes. That is what they said it would cost to do the job. They said they could supervise it, but that it would cost $3,500, as I remember the figure. But they said they would be willing to analyze the appraisals that had been made and arrive at a conclusion as to whether they were just and correct and that is what they did.

Mr. RILEY. I am inclined to agree with Mr. Rabaut, that the price is too low, considering the amount of the property involved and the development around it.

I was thinking this was something in which you could get an independent appraisal, and I do not see why it should cost $3,500.

General HAISLIP. We are still working on it, and we may be able to get a better figure.

Mr. RILEY. I would think the Washington real estate people could furnish you that information at a comparatively reasonable figure, perhaps smaller than $3,500. I think that is something you should look into.

General HAISLIP. We certainly will do that.

Mr. DAVIS. Thank you, General, for your presentation.

General HAISLIP. Thank you very much, Mr. Chairman.

THURSDAY, JANUARY 14, 1954.

CIVIL FUNCTIONS, CORPS OF ENGINEERS

WITNESSES

MAJ. GEN. SAMUEL D. STURGIS, JR., CHIEF OF ENGINEERS
BRIG. GEN. C. H. CHORPENING, ASSISTANT CHIEF OF ENGINEERS FOR CIVIL WORKS
BRIG. GEN. EMERSON C. ITSCHNER, DEPUTY TO THE ASSISTANT CHIEF OF ENGINEERS FOR CIVIL WORKS
BRIG. GEN. W. E. POTTER, DIVISION ENGINEER, MISSOURI RIVER DIVISION
COL. WILLIAM WHIPPLE, EXECUTIVE FOR CIVIL WORKS
COL. LOUIS R. WIRAK, THE ENGINEER COMPTROLLER
COL. WILLIAM S. POWERS, CHIEF, OPERATIONS DIVISION
COL. ARTHUR D. STARBIRD, ASSISTANT CHIEF OF CIVIL WORKS FOR FLOOD CONTROL
LT. COL. GEORGE F. DIXON, JR., ASSISTANT CHIEF OF CIVIL WORKS FOR RIVERS AND HARBORS
G. L. BEARD, CHIEF, PLANNING AND DEVELOPMENT DIVISION
B. J. TOFANI, CHIEF, PROGRAM DEVELOPMENT BRANCH
RICHARD HERTZLER, STAFF ASSISTANT, OFFICE, UNDER SECRETARY OF THE ARMY
LT. COL. EDMUND KIRBY-SMITH, CHIEF, CIVIL FUNCTIONS SECTION, BUDGET DIVISION, OFFICE, COMPTROLLER OF THE ARMY

Mr. DAVIS. The subcommittee will resume this afternoon with the beginning of the testimony on the program of the Corps of Engineers for fiscal year 1955.

General Sturgis, we are glad to have you here in order that you might report on your stewardship in the 11 months since you have been Chief of the Corps of Engineers and tell us about such plans as you may have for fiscal year 1955.

We will be glad to hear such general statement as you might wish to make in opening the testimony.

General STURGIS. Thank you, sir, and members of the committee.

SERVICE OF GENERAL CHORPENING

May I first make an announcement that is regrettable to me: the corps loses from its Washington office General Chorpening this coming year. He has been 5 years here in Washington, and the year that he has been in charge of the Civil Works Division for me he has done an outstanding job and I will deeply regret his going, but in justice to him, we have hopes that he will be in a position to get two stars, and having really finished his normal tour here, I certainly would not want to deny him that well-deserved reward.

Mr. DAVIS. It is not entirely unexpected to receive that word from you, General Sturgis. We had surmised it unofficially for some time and we certainly share in your regret that he is leaving us, but we do recognize it gives him an opportunity that he probably could not have if he remained here. So, it is not without unmixed feeling that we do see him go.

General CHORPENING. Thank you very much.

INTRODUCTION OF GENERAL ITSCHNER

General STURGIS. Naturally, I have done a great deal of thinking also, sir, on the officer preparing to take General Chorpening's place and I would like to introduce to you and the members of the committee, Gen. Emerson C. Itschner, who recently has been the division engineer of the North Pacific division. General Itschner is an officer of the widest experience in the corps, both in civil works and on military matters. I have known him for many years and I have worked very closely with him from time to time. I consider him outstandingly qualified to replace General Chorpening. So, it is with pleasure that I introduce to you General Itschner.

General ITSCHNER. Thank you, sir.

Mr. DAVIS. Some of us had the pleasure of meeting General Itschner on the subcommittee's trip during September. At that time we did not know he was coming here to succeed General Chorpening, but we did appreciate the work he was doing in the Northwest and enjoyed being with him, and I am sure we will enjoy having him here to represent the corps in its presentation before this subcommittee.

General STURGIS. Thank you, sir. In view of the fact that the power policies are playing a very large and increasingly important part in our work at this particular time, I think it is also a very suitable choice, due to his recent experience in the Northwest.

GENERAL STATEMENT

The Secretary, Mr. Stevens, had originally intended to be here today, but he is leaving for Korea tomorrow or Saturday, and is preparing himself for that particular trip and regrets his inability to be present.

A year ago in taking over the command of the Corps of Engineers, I was faced with a number of serious problems affecting the morale and efficiency of the Corps of Engineers. Under the unique conditions of half-war and half-peace of the previous 3 years, the corps had experienced one of the most difficult periods of its entire history.

In the field of public works, current philosophies were being strongly questioned; conflicting interests in the development of water resources were intensified; some justified, and much biased criticism was leveled at departmental agencies charged with development of our water resources, including the Corps of Engineers. It also began to be evident, as so well brought out by the Jones subcommittee, that inconsistent legislation and conflicting policies inherent in those laws over many years constituted the principal source of friction.

On the military side I found the Corps of Engineers deployed in the most remote corners of the globe, from the north tip of icy Greenland to Saudi Arabia, with its unbearable 130° daily heat; and from the mud of provincial France to the frontlines of Korea. Unlike World War II when resources in engineering skills as well as funds were almost unlimited, the corps suffered—and still is suffering grievously—from shortages of professional engineering talent in uniform compared to the civil economy and even compared to our sister services. Moreover, although charged in many respects with the missions of war, I found the corps operating under increasingly severe restrictions of peacetime activity, wholly understandable from

the viewpoint of the overburdened taxpayer, but at the same time not consistent with the desperate construction objectives assigned us on the outbreak of the Korean war. Regardless of these onerous limitations, it is, of course, the eternal duty of the Corps of Engineers to accept whatever rigorous conditions are imposed upon it by the public, by the Congress, and by the Army, and to do the best it can to serve the national interest.

That our performance during this difficult period was not always satisfactory cannot be denied and was, I assure you, a source of the deepest concern to us. With our long proud record of a century and a quarter of renowned engineering achievement and honorable service to the Nation, our reaction could not be otherwise.

Hence, on assumption of office last January, I found a very somber situation in the corps. Yet it was not the time for vain regrets. Rather, it was necessary for me to discern and adjust our civil planning to the new philosophies; to transition our crash military construction programs to the spartan dictates of rigid economy; to execute efficiently and expeditiously the stated and implied desires of the Congress; and to implement internal organization and procedures in the interests of the greatest possible efficiency.

In addition I found the Army and the Air Force dissatisfied with our performance in a number of particulars, all of which required my immediate personal attention.

I, therefore, ask your indulgence in making a somewhat longer and more comprehensive introductory statement than has been made by any Chief of Engineers in recent years. In your deliberations upon our proposed budget for 1955, I believe that these remarks will serve to give you a better background and understanding.

The major topics which I will discuss in order are as follows:

I. Streamlining of the top echelon of the Corps of Engineers.

II. Responsiveness of the corps to public trends and requirements.

III. Major improvement measures accomplished within scope of corps authority.

IV. Major problems of adverse effect to operations but beyond corps control.

V. Operations in fiscal year 1954.

VI. The budget for fiscal year 1955.

STREAMLINING THE TOP ECHELON OF THE CORPS

One of the first improvements I found necessary involved the functions and position in our scheme of operations as the Chief of Engineers himself. Both the Army and the Air Force felt that important military missions assigned to the corps were not receiving enough personal attention from the Chief.

ORGANIZATION OF OFFICE OF CHIEF OF ENGINEERS

Your attention is invited to chart I showing the top-level organization of the corps when I took office a year ago. Here is the way I found it with 1 deputy here covering these very important Assistant Chief assignments; 1 assistant for military supply; 1 for troop operations; 1 for military construction worldwide of the Air Force and Army; 1 for real estate; 1 for civil works; and 1 for personnel and

administration. The major change here which I will explain in the testimony in a few minutes is that I got authority to create, and created, a new deputy and then with that additional deputy I put in a Deputy Chief for construction for civil and military, and a Deputy Chief for military operations who can concentrate solely on troop training and other military matters such as supply.

The position of the Chief of Engineers exercising direct supervision over all major activities is clearly shown with one deputy as an alter ego covering the same broad field of supervision as the Chief. With shortage of qualified personnel our greatest problem; with responsibility for an efficient peacetime supply of engineer equipment and material to a peacetime Army of 1.5 million men; with over 100,000 engineer troops deployed in Korea and through the world; with the largest real estate responsibility of any department of Government; and with our military construction load more than 10 times our civil load, it was my opinion that no one man, however energetic and capable, could exercise the necessary broad general supervision and yet run in detail one or more of those major functions you see on the chart, such as civil works.

Yet civil works, like the other functions on this chart, is an essential part of our national defense. It not only furnishes invaluable training and experience in great responsibility to our officers, but it constitutes a highly decentralized organization in being with active construction offices in most States of the Union, all under the Department of Defense and available at an instant's notice to assume a war load. Since construction of air bases, training facilities, hospitals, depots, and the like are the first prerequisite of mobilization, the importance of our civil works should be evident, particularly in a day and age when the speed of attack and the vulnerability of the North American Continent have terrifyingly increased.

CHANGE IN ORGANIZATION

I now ask you to look at the present-day modification of chart I which shows the addition of another Deputy Chief of Engineers. I have assigned one deputy responsibility for all construction, military and civil, together with the real-estate functions, and I have placed the remaining strongly military functions such as troop operations under the second deputy. At the same time, I decentralized a high degree of authority to my deputies fully commensurate with their responsibilities. For myself I retained the decisive power in all vital issues, and the general management of the corps with respect to economy and efficient administration, including long-range planning and the important function of determining policies. While this has naturally operated to remove the Chief from a detailed knowledge of daily operations in civil works, major civil works matters are constantly brought to my attention by the Deputy for Construction or the Assistant Chief for Civil Works, and I follow through personally on matters brought to my attention by Members of Congress and civic leaders. Throughout the land under this new organization important advantages have accrued. I am freer to assist the Secretary of the Army and to contact the secretaries of other departments associated in the development of water resources; I can devote my attention to the evolvement of sounder water resources policies at a time

when they are under public scrutiny; and I am much more at liberty to visit our field activities and go over our engineering problems on the ground. Above all, I am able more readily to obtain the thinking of, and maintain contact with, local people and civic leaders in all parts of the country.

DECENTRALIZATION

Complementary to the streamlining of the top command echelon, we have sought to streamline our entire system of control. We recognized the natural trends of a big governmental organization, such as the Corps of Engineers, to seek to avoid repetition of mistakes by field offices through concentrating more and more authority in Washington, thus laying the basis for an inflexible bureaucracy. To avoid this we took two steps. First, we established a policy of greater decentralization of authority to division engineers and we are constantly looking for more ways of decentralizing authority commensurate with their responsibility. Secondly, we increased the frequency of division engineer conferences in Washington and have encouraged the most open and frank discussion of policies and procedures by these field officials. We acknowledge that they may make mistakes, and we have recognized that we must be prepared to accept them. But if they become too gross or too many we propose to change the man who makes them rather than our new system. We are gratified with the efficiency thus far obtained and by the enthusiasm and unity derived and apparent throughout our entire organization from this more flexible and responsive system of control.

RESPONSIVENESS OF THE CORPS TO PUBLIC TRENDS AND REQUIREMENTS

It is essential that the corps be responsive to Congress and to the people and that to them we appear so. In traveling some 130,000 miles during the past year, I made an especial effort not only to learn from local groups themselves their problems and views, but I checked that my division and district engineers were also sensitive to public opinions. However, the corps must be equally able to relate the viewpoint of local proposals to the Federal interest.

Also we have made particular effort during 1953 to determine and execute the guidance given us over the last few years by Congress particularly as a result of the hearings last year and by the Bureau of the Budget. At this point I should like to recount these efforts.

MAJOR IMPROVEMENT MEASURES ACCOMPLISHED WITHIN SCOPE OF CORPS AUTHORITY

The reports of this committee and of the Senate committee on our 1954 appropriation indicated the committees' desire regarding a number of general matters and specific projects. I shall indicate briefly what we have done on each of these general matters. General Chorpening will tell you about the individual projects as the hearing proceeds and, if you wish, he will go into greater detail on the general matters that I speak about also.

COST ALLOCATIONS

We have adopted for general use throughout the corps the separable cost-remaining benefit method of cost allocation on our multiple-purpose projects. This method was devised by the Benefits and Costs Subcommittee of the Federal Interagency River Basin Committee after careful study of the numerous cost allocation methods in use by the engineering profession. This method provides a means for sharing the savings from multipurpose development equitably among the several different functions of the project. This is a condition which we consider is a prime requisite of a proper cost allocation. I contemplate that survey reports currently coming in from the field will include tentative allocations by this method. We are applying this method to projects already authorized and those under construction even though in some instances earlier reports used some other method. We are also making the allocations based on actual costs whenever possible rather than on estimates that are subject to change. The Federal Power Commission too is using the separable cost-remaining benefits method. The Department of the Interior and the corps are now holding a series of meetings with the objective of working out mutually satisfactory procedures for applying this cost allocation method to the projects of both agencies. I expect that very soon all three agencies—Interior, Federal Power, and ourselves—will be on a fully comparable and uniform basis. In fact, I feel sure that before long this whole knotty problem of cost allocation will have been resolved to the satisfaction of your committee.

ECONOMIC ANALYSIS

Practices of the several agencies with regard to economic analysis are under consideration in the Bureau of the Budget and the Federal Inter-Agency River Basin Committee, and among the agencies themselves. In December 1952 the Bureau of the Budget promulgated Budget Circular A–47 for general Federal use. The Corps of Engineers last spring put this circular into effect by directive to our field offices. We have recently submitted our comments to the Budget on desirable changes however. Without doubt good progress is being made toward full coordination in this important aspect of the water resources program.

LOCAL PARTICIPATION IN PROJECT COSTS

Local participation in project costs is another field for improvement, in which the committee was interested, that has had intensive attention since last spring. We have prepared, and the Secretary of the Army has submitted to the Bureau of the Budget, a study of this matter and proposals which would increase substantially the local participation in local flood-control projects, particularly where land-enhancement benefits accrue locally. We have also submitted specific proposals for increasing the local participation on certain types of navigation projects. These are admittedly only first steps, but significant ones, toward solution of a very complex matter. Many additional interests will have to be heard and their views considered. Ultimately, legislation may be required to change the existing patterns.

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I want to state clearly that to the extent there is a Federal interest, the corps believes firmly in the principle of appropriate Federal assistance in river development; but also we believe in a partnership with local interests who should assume the costs in relation to the benefits received by them insofar as this is practicable of accomplishment.

Careful attention is being given by our Department and the other agencies in the water-resources field, to the question of integrated programs. I feel that real advances are being made. Notable examples are the Arkansas-White-Red and the New England-New York surveys with which you are familiar. We are also just now completing a study of the Middle Snake River in full collaboration with the Department of the Interior. Secretary Stevens and I have established a systematic series of discussions with the Secretary and Assistant Secretaries of the Interior, and a number of conferences have been held with the Assistant Secretary of Agriculture and high officials of the Bureau of the Budget, all directed toward better coordination of our agencies and more effective planning and development of our great river systems.

ANALYSIS OF BACKLOG OF AUTHORIZED PROJECTS

The large bulk of the apparent backlog of authorized projects has given much concern to the Corps of Engineers for several years past, and has been the subject of comment in several reports of congressional committees. Some reports have also indicated a belief that the legislative committees do not have sufficient continuing opportunity for scrutiny and control of the civil-works program. We acted last summer to propose definite procedures to improve both of these conditions. Specifically, we analyzed our backlog of projects and proposed the classification of each project as active; or deferred for further study; or inactive. Our proposal also contemplates that such a project in the lower two categories can be moved to the active list only upon further study by us and a showing to the Public Works Committees that the higher category is appropriate, followed by affirmative action of the committees to establish the project in the active category. We also stated that the projects in category III (inactive) are subject to deauthorization if the Congress desires. I believe this new system will both simplify the situation and meet objections as to lack of congressional control, but again, these proposals are first steps only and need much further careful consideration and, eventually, legislation. We in the corps are most anxious that our active program be truly alive and that all the existing deadwood be cut out of the backlog.

FISCAL YEAR 1954 OPERATION AND MAINTENANCE FUND ALLOCATIONS

As requested in the committee's report on last year's appropriation bill, reports showing the actual allocations of fiscal year 1954 operation and maintenance funds to individual projects as compared to the tentative budget allocations are being filed with the committee at the end of each quarter of the year. Nearly all of the major deviations between the tentative and actual allocations apply to the navigation channel and harbor projects. These deviations result from our continuing review and reevaluation of the relative priority and

urgency of dredging and structural repairs occasioned by the variable shoaling of project channels and by unforeseen repair requirements affected by storms such as the North Atlantic storm of last November. The individual project estimates for budget purposes are necessarily based on past experience and our best judgment as to requirements a year or more in advance of actual operations. The deviations for the individual projects have been discussed with, and explained in detail, to your committee's staff.

The corps desires and will make every effort to keep the amount of the deviations to the absolute minimum consistent with the necessity of adjusting the individual project allocations to insure that the funds being expended will produce the maximum possible benefit and an economically sound maintenance program.

In response to another request of your committee, I have made a careful analysis of the economic justification of the 268 waterway and harbor projects now being maintained and a report thereon has been furnished the chairman of the committee. This study discloses that almost without exception the navigation projects included in the maintenance programs for the fiscal years 1953 and 1954 and the program to be considered by the committee for 1955 are economically justified; that is, the direct annual benefits exceed the annual charges, including interest on, and amortization of, the capital costs as well as the annual costs of operation and maintenance. If reasonable intangible and collateral benefits are considered, all of the 268 projects are economically justified. While the study covered only one-quarter of all of the authorized navigation projects, the remainder on which no maintenance is currently being performed will be made the subject of a similar formal analysis, where appropriate, prior to programing maintenance work. Further, those very few projects having borderline justifications at this time will be reexamined as changed conditions and navigation requirements dictate, and careful review of all work included in the annual maintenance programs will insure that the work is clearly justified. I have in mind making a study of possible classification of the projects in maintenance status similar to the study I just spoke of with regard to the backlog of authorized construction projects.

Also, the House Appropriations Committee report for fiscal year 1954 points out the conflicting statutes that exist with reference to local flood protection projects. The 1936 Flood Control Act required local interests to provide lands and rights-of-way and to maintain and operate all flood control projects. The 1938 Flood Control Act reversed that policy as it applied to reservoir projects and to channel improvement projects, but not for other local protection works. This change was retroactive so that it relieved local interests of obligations on projects authorized in the 1936 and 1937 acts in addition to applying to new projects authorized in the 1938 act. In the 1941 Flood Control Act Congress recognized this discrepancy in local cooperation requirements for local protection projects and again required local cooperation for channel improvements for local flood protection. This change, however, was not retroactive and channel improvements constructed under authorizations contained in the 1936, 1937, 1938, and 1941 acts continued to be maintained with Federal funds. The committee directed that the Secretary of the Army take necessary

steps to turn these projects over to local interests concerned for operation and for maintenance.

In compliance with that directive letters requesting local interests to assume maintenance have been dispatched to all local interests concerned in local flood control protection projects which are currently being maintained with Federal funds except the Red Lake and Clearwater Rivers project in Minnesota. In the case of this project special conditions exist that make it a general rather than local project.

Reports on local interests' willingness and ability to assume operation and maintenance are expected to be complete late this month. The reports so far received indicate that local interests generally reject the proposal. Information concerning the need for legislation to accomplish the objectives of the committee will be furnished at the time that the complete report on this subject is presented.

SIMPLIFICATION OF SURVEY REPORTS

The whole broad matter of the authorized survey program has long been a continuing question under active study by the Corps of Engineers. There are many angles to it which give me real concern and which are not susceptible to quick solution within the resources and authority available to the corps. For this reason the subject might well be covered under the next section of these remarks which covers those problems which do not affect the corps alone. However, since notable improvements have been made in this field under our own authority I shall cover surveys in this section. Last year I made special pleas for full allowance of our budget request for the authorized survey program because we are everywhere unable to prosecute many investigations of badly needed projects and the public is understandably interested in and pressing us very strongly for engineering and economic estimates. The reports of this committee and the Senate committee took cognizance of the problem and of the studies then under way. The analysis we initiated this year of our heavy survey backlog is nearly finished and will be complete before the end of this month. It follows the same pattern as the backlog study of authorized projects mentioned previously, and sets up categories of active surveys, surveys that need further study to determine their proper disposition and inactive surveys. It is intended that this study and our proposals will be submitted to the Bureau of the Budget and the Public Works Committees for their consideration and action. The immediate result, as far as the corps is concerned, will be a sizable reduction in that portion of the backlog for which funds will be currently justified.

However, reducing the backlog is only part of the solution. We are investigating and adopting measures for carrying out survey report work at less cost. During last summer and fall my office analyzed comments and suggestions made to this end by our division and district engineers. Last month we issued them a letter of instructions which should effect simplification of reports and considerable savings in cost. This is only a start. We will continue to make improvements to this end, without serious impairment of sound engineering and economic analysis; although careful coordination with the other agencies in the executive branch as well as with the committees of Congress will be required.

IMPROVEMENTS IN COORDINATION OF ACTIVITIES WITH DEPARTMENT OF THE INTERIOR

The foregoing remarks complete my coverage of several improvements that relate directly to the stipulated desires of the committees of Congress. However, we have made other improvements on our own in the past year which I think will also be of interest to the committee and to the Nation. For example, you will find that there is now very close coordination between the Corps of Engineers and the Department of the Interior. While there has been unfortunately much exaggeration of the differences between the corps and the Bureau of Reclamation, it cannot be denied that certain policies conflicted. But I am now happy to report that the controversies which loomed so large in recent years have largely been eliminated or are well along toward amicable and effective settlement. Secretary Stevens and Secretary McKay early last year made it a matter of personal concern that the old issues be settled or referred to proper higher authority for determination. We have had numerous meetings and other discussions with Secretaries McKay, Tudor, and Aandahl and without exception have been able to find common meeting ground. I can say in all sincerity that our two Departments are now working in close harmony and I shall continue my personal efforts to continue the wholehearted collaboration. I am confident that Secretary McKay and his Under Secretary and Assistant Secretaries reciprocate this view. This collaboration I think should also do much toward the development of sound national water policies.

Coordination of the corps' work with the watershed work of the Soil Conservation Service has also been a subject of intensive collaboration with officials of the Department of Agriculture in recent weeks. Assistant Secretary Coke of Agriculture has devoted much time and effort to the meetings that we have had, and are still having. To illustrate the genuine desire for interagency cooperation that now exists among the Departments of the Interior, Agriculture, and Army, I may cite the memorandum of understanding on the Arkansas-White-Red Rivers survey signed on November 25 by Secretaries McKay, Benson, and Stevens. The memorandum also establishes a Committee of Assistant Secretaries to assure full and continuous coordination of the three Departments in the AWR survey and to decide quickly on matters which cannot be settled in the field.

REVISIONS IN REAL-ESTATE POLICY

As the number of reservoirs in operation has increased we have found ourselves the custodians of a large amount of federally owned land. Recognizing the undesirability of concentrating ownership in the Government we have revised our real-estate policy radically so as to acquire only the minimum land essential to the construction, operation, and maintenance of our projects. Secretary Stevens has taken a direct interest in this matter and has participated personally in the formation of the new policy. When fully effective it will decrease significantly the costs of land for reservoirs. Of equal or greater importance are the facts that less land will be removed from local tax rolls and that there will be less land requiring supervision and administration by the Government with the costs attendant to those duties.

The new real-estate policy after approval by Secretary Stevens; was worked out in collaboration with the Department of the Interior and both Departments jointly and publicly announced its adoption. This is another example of the close cooperation and unity of action between the Departments of the Interior and the Army.

SUCCESS OF NEW BUDGET AND ACCOUNTING SYSTEM

Last year when we appeared before this committee we were in the process of setting up a new and improved budget and accounting system. The system has now been in full effect for more than 6 months and it is proving to be as useful and successful as we had hoped. We are now moving to refine the system and simplify it, where feasible, in order to make it even more useful as a tool for field control by job supervisors and district engineers. I am glad to know that the committee and your staff find the system supplying needed information better than ever before. With a little more experience I am sure the worth to you and to us can be further enhanced.

IMPROVEMENTS IN STRUCTURE OF FIELD ORGANIZATION

The Corps of Engineers and the Secretary of the Army have given much thought and study to possible improvements through changes in the structure of the field organization of the Corps of Engineers, including consolidation of some district and division offices. During the year the northeast and north military construction districts have been consolidated and relatively minor readjustments effected in continental districts. Many other possible consolidations have been and are being studied. It has not been conclusively evident that the prospective economies would be sufficient to warrant, at this time, the resultant dislocation of persons and the temporary administrative confusion that would be occasioned.

The field organization of the Corps of Engineers is never static since workloads shift as between civil and military construction and also within these respective activities. Furthermore, for the first time since the Korean emergency began in the summer of 1950, an appreciable number of new starts is included in our budget. If the Congress concludes that new starts should be made in fiscal year 1955 it will have a very appreciable impact on the problem of field organization. Also, there is the distinct possibility that the Congress may direct the construction of the St. Lawrence seaway, with the Corps of Engineers as the construction agency. In addition to these factors anticipated changes in the size and scope of the Air Force and Army construction program during the coming year may require further evaluation to determine what organizational structure can best serve both the changed civil and military programs. In view of these considerations, it has been deemed wise to proceed slowly and cautiously at this time with any major consolidations. But, as it becomes more clear what the fiscal year 1955 program will be, on both civil and military, the Corps of Engineers will be better able to appraise the situation and make whatever field realinements and consolidations appear sound from the standpoints of national defense and economy.

MAJOR PROBLEMS OF ADVERSE EFFECT TO OPERATIONS BUT BEYOND CORPS CONTROL

I have discussed a few of the problems where we are able to undertake solutions as directed by the committee of Congress or largely on our own responsibility because we had the means and authority to proceed. There are many other important matters that we cannot solve on our own but which have a profound effect on the corps and the work for which we are responsible.

I have already mentioned that the most important problem affecting our efficiency is our deteriorating personnel situation. While our military personnel situation is currently very critical, the civilian personnel situation is a threat to our future.

The important and complex responsibilities assigned to the Corps of Engineers require a highly trained civilian work force, vitalized by a steady inflow of young technical talent. The maintenance of this work force is a continuing problem, with many complications. Two major obstacles are the difficulty of inducing young graduate engineers to accept a career in the corps, mainly because of the low salaries which must be offered, and the lack of an adequate number of supergrade spaces (GS–16, GS–17, and GS–18) to provide for the recognition of our highly responsible professional and technical personnel.

The corps has developed a thorough college recruitment and rotational training program to induce college graduates to choose a career with the Corps of Engineers, and to insure that they are thoroughly indoctrinated in the diversified work of the corps as a first step in their career. The college recruitment program, though vigorously prosecuted, has failed to produce an adequate number of young engineers for the past several years, due primarily to the inability of the Government to offer salaries competitive with private industry. For example, a study by the Illinois Institute of Technology reveals that engineering graduates from the class of 1953 received an average of $362 per month on their first assignment. This finding is corroborated by another survey by New York Coopers Union, which developed an average salary of $360. Discussions with other engineering schools reveals that engineering graduates are initially receiving from $350 to $400 per month with greater opportunity for rapid advancement in the offing.

The entrance salary for graduate engineers in Federal employment is $284 per month (grade GS–5). With such a wide variation in entrance salaries relatively few young engineers desire to enter Federal employment, especially in view of the gradual reduction of other incentives which formerly could be used to partially offset the smaller Federal salary.

Considering these facts, it is my firm and deep conviction that Government salaries in the professional field of engineering must be made more competitive with those offered by private industry in order to provide for a regular inflow of a reasonable cross section of the national talent. What we do today has a very great effect upon the future efficiency of our civil servants and Government administrators of the future.

The work force of the corps, while accounting for only 2½ percent of total Federal personnel, employs approximately 18 percent of the

total engineering personnel in the Federal service. Our program is carried out, and this technical force is maintained, with an allowance of only 3 supergrade positions (2 GS–16 and 1 GS–17). The need for additional positions in these grades is urgent to eliminate compression of grades, establish desirable career patterns, increase employee morale, and provide for recognition and retention of many highly responsible professional and technical personnel in the face of a serious national shortage of engineers and scientists. As to the extremely high quality of our civil personnel in key positions throughout the corps—I am speaking now of the older men—I think it is a tribute to their efficiency and the nonpartisan character of the corps that not one of our key people holding policymaking or highly significant technical positions had to be changed or replaced during the realinement of those positions in all other departments of Government during the past year.

On the other hand, analysis of the situation in other agencies and bureaus with similar responsibilities indicates that the Corps of Engineers should receive further recognition insofar as supergrade positions are concerned. The Secretary of the Army fully occurs in this conclusion but is unable to offer any assistance to the corps in the foreseeable future in view of the limited number of supergrade spaces allotted to the Department of the Army. It is firmly believed that additional supergrade positions for the civil works program are justified and appropriate because of the scope, complexity, and importance of the program and also because of the many precedent statutes which have authorized supergrade positions for other agencies and departments since the Classification Act of 1949.

Another problem of very great concern and perplexity to me is the continuing exposure of great cities and alluvial valleys to disastrous floods. The Federal flood control program is an enormous undertaking. The annual appropriations aggregate large sums and substantial progress has been and is being made. But some of the most urgent flood-control projects authorized and initiated over a decade ago are still uncompleted. In the event of disaster the Government and particularly the Corps of Engineers will be held responsible by the suffering communities. The city of Los Angeles is an example. Not only is that project far from complete but the rapid growth of population and urban development is actually outstripping the progress on the flood-control works. The Kansas Citys are still exposed to the same catastrophic disaster suffered in 1951. In my opinion these grave hazards and others must be removed as soon as possible.

Uninterrupted navigation is essential to prosperity and high levels of economic activity in this country and to our national-defense strength. But for several years we have been risking serious interruptions to vital navigation routes because of the obsolescence of structures and the lack of minimum adequate means to maintain channels properly. As soon as the fiscal conditions will permit, these deficiencies also should be eliminated. In the meantime the calculated risks loom increasingly larger each year, and I shall illustrate, I think quite vividly, this point in the next section.

PACE OF WATER RESOURCE DEVELOPMENT AS RELATED TO ECONOMY GROWTH

I believe firmly that a stable economy in the United States needs wise and steady development of our natural resources, including realization of the potentialities of our river systems. Conversely, the lack of reasonable progress on these developments tends to weaken the economy. Unquestionably the pressing demands on the public funds must be placed in proper priorities and balanced against the abilities of the citizens to provide the wherewithal for the Government's activities. I believe, however, that water resource developments are not now keeping abreast of the growing economy of this country. These projects are truly capital investments in productive activities. They must be expanded in consonance with the economic progress of their regions as soon as it is possible to do so.

OPERATIONS IN FISCAL YEAR 1954

At the start of the fiscal year 1954 there was available for the civil-works program an unexpended balance, on an accrual basis, of $261,323,487, exclusive of the revolving fund. For 1954 there was appropriated $423,186,600. There was available for expenditure the sum of $684,510,087 for the accomplishment of the program then scheduled and set forth in the data presented to the committees last year. Excluding certain mandatory transfers to other agencies and the revolving fund this amount becomes $2 million less, approximately, or $682,312,440.

Subsequent to adjournment of Congress the President instructed that all governmental programs be reviewed with the objective of a further reduction in expenditures. The civil-works program was reviewed accordingly and it was estimated that by rescheduling certain of the construction work and by deferring some work until a later date, we could reduce fiscal year 1954 expenditures and obligations by about $41 million below those originally contemplated. This amount has been placed in budgetary reserve.

The attention of the committee is invited to the fact that every effort is being made to maintain the schedules of construction and completion of projects that include power and are actual revenue producing projects.

Particularly noteworthy is the construction progress on McNary and Chief Joseph Dams in the Columbia Basin and Garrison and Fort Randall Dams in the Missouri Basin. Excellent construction weather prevailed throughout the fall months and our contractors were able to continue their activities during a time when it would normally be expected that they would be limited or shutdown because of the weather.

Work on the Folsom Dam in California has continued to progress at an encouraging rate even though during the course of excavation for the left abutment a serious fault zone was encountered. Corrective work was necessary and our reschedule indicates that it is feasible to continue construction operations geared to the power generation date of the Bureau of Reclamation, which, as you know, is building a powerhouse there.

I should like to mention at this time that while from the viewpoint of economy it is always desirable to accomplish work as rapidly as

funds can be efficiently applied, the Corps of Engineers is proceeding on the basis of limiting total expenditures to an amount consistent with overall objectives of the administration. Therefore, it may be expected that delays on some of our projects and gains on other projects will result in our having accomplished our work substantially in accordance with the requirements previously set forth by Congress and the desires of the administration to meet other overriding objectives such as the availability of money, the public debt limit, et cetera.

By continuing review of the maintenance program, the application of restrictive criteria for operations, and adjusting the fund allocations to individual projects, it will be possible to perform with the maintenance funds appropriated for fiscal year 1954 the most urgent maintenance work on some 230 waterway and harbor projects and to meet the essential requirements of vessel traffic now handling nearly 1 billion tons of commerce annually. A few of the repair jobs making up the large backlog of needed rehabilitation of navigation structures will be performed. This is being accomplished notwithstanding the fact that since 1948 the level of maintenance appropriations has remained fairly constant while salary rates and the cost index have increased more than one-third. As a result we are carrying out a substantially lesser volume of work during a period of increasing navigation tonnage, greater use of improved waterways and harbors, and larger and deeper draft vessels. I will illustrate that, I think, more vividly in a minute.

We are operating effectively the 95 flood-control reservoirs now comprising the enlarging systems of flood protection works throughout the country, which have over 13 million acre-feet of reservoir capacity for storage of damaging floodwaters. In addition 25 multiple-purpose projects are being operated, having an installed generating capacity of 2½ million kilowatts of hydroelectric power and providing flood storage capacity of some 10 million acre-feet.

In your report on the 1954 appropriation, the committee stated its expectation that unexpended and unobligated balances will be not in excess of 25 and 5 percent respectively of available funds at the close of fiscal year 1954. I am confident that we have made satisfactory progress in this regard.

At the bottom of chart No. II there are shown by two curves the unexpended and unobligated balances in terms of their percentage of funds available.

Here we have the percentage of funds available, running from zero to 50 percent, and here we have the fiscal years. As to unexpended balance, the appropriation which you gave for this year and the unexpended balance for the last added together were the funds available, and the percentage of funds available we have unexpended for that year, beginning at 43.1 for the previous year, ended at the end of the year at the high rate to which the committee took exception of 42.5. At the suggestion of the committee we got to work, and by June 30, 1953, we were able to reduce that to 30.4. I want to inform you that that has continued through fiscal 1954. We expect by the end of fiscal year 1954, this coming June, to have not more than 23.1 percent of the funds unexpended available at the start of the year. I think that the limitation that you gave us was 25 percent.

There has been improvement in the field of unobligated balance as well, and we expect to come out with 12.5 percent. On June 30, 1951, we had 16.3 percent and on June 30, 1952, we had 12.8 percent in the unobligated balance. It rose to 18.3 on June 30, 1953, largely due to the fact it was during that calendar year, or fiscal year, that the Kansas City flood occurred, and we got some $35 million extra for that and we did not need to entirely expend it, which accounts for the rise to 18.3 percent not obligated. But going ahead this year we will come out with funds available of 12.5 percent unobligated.

Mr. DAVIS. I would suppose the inclining line from June 1952 to June 1953 is partly accounted for by the review which took place during that period of time, too?

General STURGIS. That certainly helped, too, but we continued during the past year and expect to continue during the present year.

THE BUDGET FOR FISCAL YEAR 1955

The budget estimate for fiscal year 1955 totals $444,322,000 and is broken down by appropriations as follows:

General investigations	$2, 800, 000
Construction, general	308, 322, 000
Operation and maintenance, general	76, 200, 000
General expense	9, 800, 000
Flood control, Mississippi River and tributaries	45, 200, 000
Niagara remedial works	2, 000, 000
Total	444, 322, 000

The amount provided for general investigations will permit very limited progress on the program of examinations and surveys and on the collection and study of basic data. The amounts provided for the Arkansas-White-Red River Basins and the New England-New York surveys contemplate the completion of these investigations by the end of fiscal year 1955. Progress on examinations and surveys will be limited to a small number of important investigations which will result in recommending projects necessary for transportation and major industrial activities, the protection of important defense establishments, the protection of agricultural productivity, and the general economic welfare of the Nation. I consider it highly important that such investigations be carried to completion as soon as practicable, in order that such high priority projects as are determined to be feasible, can take their proper position in the civil-works program.

The amount requested for the "Construction, general," appropriation provides minimum amounts for continuing the projects presently under construction; for initiation of 20 new projects, features of projects, or resumptions; and for carrying on the program of advance engineering and design. In our efforts to curtail expenditures during fiscal year 1954, a number of the projects before you have been stretched out so that actual completion will be delayed beyond the time originally contemplated. These delays are proposed to be continued and the amounts requested do not contemplate making up these delays during fiscal year 1955. Among the more important delays contemplated in the 1955 budget, are those relating to the initial power production at some of the larger multiple-purpose projects. For example, the power production at the Dalles Dam

will be delayed for 1 year; at Gavins Point Dam for 6 months; at Buford Dam for 1 year; and some of the later units at the Chief Joseph Dam will be delayed 1 year.

While you will be interested in the number of projects being provided for during the fiscal year 1955, I think you will also be interested in the trend of the number of Corps of Engineers projects appropriated for during the past several years. May I, therefore, ask your attention to chart No. 3 now displayed. Chart No. 3 is an interesting chart in this respect and indicates this trend by showing the number of projects appropriated for each year since fiscal year 1947, on the extreme left. You will note that in 1947, the second year after the war, 146 projects were appropriated for and by 1949, shown on the chart, the number increased to 285 projects shown by the peak of green. Beginning with the Korean conflict and the concurrent policy of no new starts, the number of projects was continually reduced until fiscal year 1954 when there were only 82 projects, shown on the right, which might be compared with the peak. With the 20 new starts and resumptions contemplated this trend has been stopped but the downward trend in appropriations continues. There are 67 continuing projects provided for in the 1955 budget estimates and the amounts budgeted provide for completion or essential completion of 17 of these 67 projects during the 1955 fiscal year. Of course 1955 is not shown on that chart, but would be a downward figure, as you can see, further to the right. As the total number of projects in the 1955 budget is 87, it is 30 percent of the number of projects in 1949 although the appropriation is 70 percent of the 1949 appropriation. So we are comparing 30 percent of the projects in 1949 with a reduction in appropriations of only 30 percent.

Chart No. 4 is even a more interesting chart which, I think, will explain this annually. Here we have, in hundreds of millions of dollars, the appropriations for the different fiscal years. The peak is here in 1950.

This black line represents the total portion of each appropriation devoted to multipurpose projects, so you can see the climb in multipurpose projects and also the greater proportion of the total appropriations required. Here it is considerably less than one-half, and here it is considerably over one-half of the appropriation. As the ceiling comes down you can see the very large proportion of the total appropriation required by multipurpose projects.

I would appreciate if you would remember for the next chart also this area in here, the proportion being so much less to place on our smaller projects throughout the country.

Therefore, I very strongly support the action of the President and the Bureau of the Budget in recommending 20 new starts, and resumption of smaller-type projects. This constitutes an excellent beginning on broadening the base of the civil-works program and meeting the increasingly urgent demand for small, though highly justified, projects in all parts of the Nation.

The new projects in general cover improvements of existing harbors or waterways to provide reliable and expeditious movement of traffic which will result in substantial monetary savings; or they are projects to give highly developed flood protection to urban areas, particularly those where defense or industrial activities are concentrated. In addition to the new projects, there are included a number of resump-

tions of projects where the Federal Government has made a substantial investment and further postponement would result in considerable economic loss. Included also is the Warrior lock and dam project which will replace existing structures that are now in such physical condition that further repairs are impracticable and a serious threat of failure and consequent closure of the waterway there makes the risk of further delay inadvisable. The new projects are small in cost and provide benefits for navigation, flood control, and related water uses other than hydroelectric power.

The amount included for advance engineering and design, $2,500,000, provides for the continuation of planning on 30 projects and initiation of planning on 14 more projects. Twenty-seven projects will be brought to the point where they will be ready for initiation of construction. I cannot overemphasize the urgent need for providing funds for this activity. It is during this stage of a project that many detailed problems are resolved, a basic detail design is prepared, and a firm cost estimate is made. The amount requested for 1955 is a minimum to make a reasonable number of projects ready for construction. As the fiscal requirements for continuing projects are reduced, the necessity of having new projects ready for construction increases. For example, the new projects in the 1955 budget will be taken off the shelf of our backlog of projects ready for construction, and we should be in a position to replace them with others.

The amount provided for the "Operation and maintenance, general," appropriation is below the actual appropriation for fiscal year 1954. This amount contemplates the deferment of urgently needed maintenance work until such time as the budgetary policy will permit the accomplishment of that work.

You probably have seen this chart before, gentlemen, which is the Engineering News Record cost-of-construction index, which, as you can see, is still rising. In connection with the previous chart, where I showed the smaller proportion for the smaller projects, that is reduced by the cost index, so it has not only been the influence of the multipurpose projects, but the influence of the cost index as well

I would like to refer to this cost index on the next chart also.

We have on the left a scale that shows waterborne commerce of millions of tons per year. In this column we have the maintenance appropriations for navigation projects in millions of dollars. This curve is represented in black over here on the calendar year basis because we receive our information on the calendar year basis. That shows an upward trend in commerce. The drop here was due largely to the reduction of commerce on the Great Lakes due to the steel strike. I think we can say there is an upward trend of the tonnage which uses the locks and channels.

The solid red curve represents the maintenance appropriations for navigation projects each year, and we can see there a slightly downward trend while the commerce goes up, but if you apply the cost index chart to show the work and materials you can put in the maintenance of projects, and remember that the projects themselves are getting older each year, then you can see what our maintenance problem is. With this trend downward, this goes up. That, gentlemen, is the nub of the problem.

The funds requested for the "General expenses" appropriation, $9,800,000, is essentially the same as was appropriated for fiscal years

1954. However, it should be noted that the amount for 1955 includes the entire cost for collection of commercial statistics and for other regulatory activities such as the issuance of permits. In previous years a substantial part of these costs has been charged to projects under maintenance appropriations. The funds actually available for comparable activities under this appropriation in fiscal year 1954 is approximately $10,800,000. Accordingly, it can be seen that the 1955 budget contemplates a reduction of about a million dollars for the administrative expenses of the Corps of Engineers. To do this will require the curtailment of some activities in order that the functions most necessary to the operation of the program can be continued.

The appropriation request for the Mississippi River project contemplates a further reduction of over $6 million from the appropriation for fiscal year 1954. The amount requested will require the deferment of essential operations, particularly with respect to bank-stabilization work. Large sums of money have already been expended on this project and extremely large benefits have been realized. The integrity of the levees already built, and which are well advanced to completion, is continuously endangered by the river trying to resume its natural course. It is essential that we proceed as rapidly as funds permit with the bank-stabilization work if we are to avoid the necessity of expending large sums for levee setbacks and for maintenance of levees.

The President said in his state of the Union message last week that the St. Lawrence seaway is important to our national security and economic welfare. No doubt the urgency of this project is evidenced by its special and unique mention in his message. Its economic justification is unusually high for a project of its scope and size. I assure you that the Corps of Engineers is entirely ready to go ahead with this project without delay. Aside from our experience in the detailed investigation and planning of this project in the early 1940's, we have placed ourselves currently in a position of organized readiness, should favorable legislation be enacted at this session of Congress.

Mr. Chairman, this concludes my statement. It is a real pleasure to appear before your committee. I thank you particularly for giving me your attention for such a long period.

Mr. DAVIS. General Sturgis, I think it was entirely justified for you to make what you referred to in your remarks as a somewhat longer and more comprehensive statement than Chiefs of Engineers have made in recent years. I believe you have given us an overall picture of this entire program that every member of the subcommittee needs to have.

NEW ORGANIZATION PERSONNEL

I wonder if you would be good enough to refer back to that first chart again and to fill in the names of the top people in your organization.

General STURGIS. My new organization?

Mr. DAVIS. Yes.

General STURGIS. The Deputy Chief for Construction exercises supervision over those projects. He does not have direct control. The deputies still report to me. This concept is of deputies acting in my stead as if they were a part of me, so to speak. I have every

confidence in them. Maj. Gen. Bernard L. Robinson is Deputy Chief for Construction, and has both civil and military construction. As you know, he is one of the most qualified officers of the Corps of Engineers from the standpoint of proven ability and experience. I became first closely acquainted with him in the Southwest Pacific. He has been more recently division engineer for the South Atlantic Division at Atlanta, and subsequent to that he attained distinction in Washington as Engineer District Commissioner.

Maj. Gen. A. C. Lieber is Deputy Chief for Military Operations.

Heading real estate is Col. Howard V. Canan.

The Assistant Chief for Civil Works is General Chorpening.

The Assistant Chief for Military Construction is Brig. Gen. D. H. Tulley.

The Assistant Chief of Engineers for Military Operations is Col. Hubert Miller.

The Assistant Chief of Engineers for Military Supplies is Colonel Baker, who has just come back from Korea.

The Assistant Chief of Engineers for Personnel is Col. Jackson Graham, who has been in that office several years.

Mr. DAVIS. I wonder if you, General Chorpening, will fill in the personnel in your shop, which is particularly within the province of this committee.

General CHORPENING. Col. William Whipple is my executive officer, and he will handle the multipurpose projects this year, taking the place of Lieutenant Colonel Paules who was here last year.

Colonel Dixon will handle navigation problems previously handled by Colonel Milne.

Colonel Starbird will handle the flood control items that previously were handled by Col. Wright Hiatt.

Colonel Powers is Chief of my Operations Division. He may appear briefly before the committee.

Mr. Beard is in charge of the Planning and Development Division of my office.

Mr. Tofani works in Mr. Beard's division and he is head of the Program Development Branch.

Colonel Kirby-Smith and Mr. Freed are with the Army comptroller.

Mr. Richard Hertzler is in the office of the Under Secretary of the Army and works with us on civil works matters.

Colonel Wirak, the engineer comptroller, is here.

Mr. DAVIS. I understood that Mr. Earl Johnson, who either is leaving or recently did leave the office of Under Secretary of the Army, had been designated with primary responsibility in the Army civil functions program. Has any successor to him been designated with that responsibility?

General STURGIS. No, sir, not to date. If you will recall, in my opening statement I mentioned my ability to work closely with the Secretary, and the Secretary has exercised a very close supervision. I have been able to be with him several hours a week on an average, and it is still in that status in the absence of Mr. Johnson. I do not know whether the Secretary intends to appoint one of his new Assistant Secretaries to take the place of Mr. Johnson or not. He has not given me that information.

COORDINATION OF GOVERNMENT AGENCIES

Mr. DAVIS. It is greatly gratifying to members of the subcommittee, I am sure, to have your comments with respect to the coordination among the various agencies of the Government concerned with the Nation's water resources policy. At one point I noticed that you mentioned your complete understanding with the Department of the Interior and the Federal Power Commission and left out the Department of Agriculture. I wondered if that was an omission of significance until later on you did mention you had been able to reach a considerable degree of understanding with that Department as well.

General STURGIS. Mr. Chairman, I would say this, that our first efforts, because of the fact that there was more or less public concern, was to get together with the Department of the Interior. There had not been, I believe, concern over any differences with the Department of Agriculture. During the year 1948 we had a very firm working agreement with the Department of Agriculture, but, as I mentioned, later there have been ideologies and philosophies in the field of water resources which are being given very serious consideration by a great part of the Nation. So I would like to answer your question by saying we went to the Department of the Interior first to coordinate because of the public concern, and I believe it has been mentioned informally by possibly the President himself. So that is where we concentrated and it has been most effective and has been a very great pleasure indeed. I find there are many things which Under Secretary Tudor will help out with, and vice versa, I may do something that will be helpful to the Department of the Interior. There is a very close relationship.

In the field of agriculture the problem has been more to determine the silhouette of the problem itself and find what that is before it can be solved. It is still in that stage. We have made notable progress insofar as the AWR survey is concerned because that had been slowing down and there were several objectives the departments had which were difficult to reconcile. That was a very progressive step. But as to the broader policies we are still working with them. During the last couple weeks General Itschner has been for many days holding conferences with their people in connection with one particular project which, if we can settle the issues, can form a pattern, but we are finding very different approaches. I might say that in some ways it is like adding apples and oranges together. If you start with three apples and three oranges and try to add them together you end up with three apples and three oranges. We hope the Hoover Commission, with its task force, will go into that problem. I think the Federal interest is a large part of the solution to the problem. It is just a question of a basic difference in philosophy. It is not a question of solving a common engineering problem.

UNIFORM COST ALLOCATION PROGRAM

Mr. DAVIS. You mentioned you had pretty well worked out a uniform cost allocation program with the Federal Power Commission and the Department of the Interior. I wonder what success you have had in working out a similar understanding in that regard with the Department of Agriculture. I am referring specifically to the

initial appropriation in the 1954 fiscal year of $5 million for the development of what they referred to as pilot projects for conservation practices. Have you been able to work out any understanding with them as to their benefit to cost allocation and the criteria for setting up cost ratios, and so forth?

General STURGIS. Those matters have been discussed in these other negotiations, in the AWR survey and in the current effort to get together an integrated program in connection with the Salt-Wahoo project in Nebraska.

With respect to the pilot program of the Department of Agriculture about which you speak, some time ago when it was authorized we wrote to the Secretary of Agriculture, considering our interest under the 1936 act in flood control, and offered any service we could render to the Department of Agriculture and indicated that in their field-work our district engineers had been informed that they should be ready at any time to cooperate. I have not checked whether there have been any calls from the agricultural field personnel to our people or not. I did receive a reply, signed by Assistant Secretary Coke, expressing appreciation of our offer to render services. However, that pilot program is more or less an experimental program for them to get up their own data. We will be tremendously interested in the outcome.

REAL ESTATE POLICY

Mr. DAVIS. You mentioned the new real estate policy, General Sturgis. I wonder if you would enlarge on your comments in that respect and tell us a little bit more about the guiding principles of that policy and what effect you anticipate it will have on land costs for various projects, and how it might affect the operation of the projects following construction.

General STURGIS. The essential criteria, of course, was what land is definitely needed for project operation; what is the absolute minimum of land necessary. That is how the problem was approached. In that connection, the land on which the structures are built, such as dams and locks, obviously is land that we must own in fee simple. Also, in connection with borrow pits where a man's land is damaged so that it is no longer valuable to him, we would also pay for that land in fee simple if he so desires, but if he should by any chance wish to rent it or give an easement on it we would do so, but normally land that is destroyed is purchased in fee simple.

We are buying in fee simple only the land up to the 5-year flood frequency instead of buying up to the designed flood frequency or to the spillway flood frequency. I have a statement here which goes into greater detail for the record.

Mr. DAVIS. It will be placed in the record.

(The matter referred to follows:)

JOINT POLICY-LAND ACQUISITION, RESERVOIR PROJECTS, DEPARTMENT OF THE INTERIOR-DEPARTMENT OF THE ARMY

1. *Lands to be acquired in fee.*—The fee title will be acquired to the following lands:

(*a*) Lands necessary for permanent structures.

(*b*) Lands below the top of the pool elevation for storing water for navigation, power, irrigation, and other conservation purposes.

(*c*) Fee title in general will be acquired to all land 300 feet horizontally from the edge of the conservation pool described in paragraph 1 (*b*). In those projects where the topography is precipitous, or where the topography is unusually flat, and where such discretionary action is desirable, fee title may be acquired to those lands which are included in the 5-year flood frequency rather than 300 feet horizontally.

(*d*) Additional lands which may be needed to provide for limited public use and reasonable access in accordance with applicable laws, or for operation and maintenance of the project.

(*e*) Lands covered by the exception noted in paragraph 2 (*f*).

2. *Lands for which easements are to be acquired.*—Easements will be acquired to the following lands:

(*a*) Additional reservoir lands needed for flowage in reservoir areas above those described in paragraph 1 (*c*).

(*b*) Lands in reservoir areas of navigation only projects.

(*c*) Lands in reservoir areas of flood control only projects which do not provide conservation pools.

(*d*) Lands required for a relatively short time for temporary structures or for use during the construction period only.

(*e*) Easements may be acquired for lands in the zone as defined in paragraph 1 (*c*) above the conservation pool, and which are in remote areas of the reservoir or which had previously been subject to frequent inundation, where it is determined that fee title is not required.

(*f*) Fee title may be taken as necessary where it is to the financial advantage of the Government to acquire fee rather than easement, and in special cases to prevent hardship.

3. *Blocking out.*—In land acquired in fee, blocking out will be accomplished in accordance with sound real estate practices, for example, on minor sectional subdivision lines; and normally, land will not be acquired to avoid severance damage if the owner will waive such damage. For lands acquired in easement, close tangents may be used in the upper limit of the easement-held lands; the final easement taking line thereof should generally follow the upper floodline when elevation differences are not significant. Tangents will not be refined to the point they are economically disadvantageous. If more economical, easements may be secured on the basis of the right to flood to a prescribed elevation rather than to block out the upper floodline.

4. *Mineral rights.*—Mineral, oil, and gas rights will not be acquired where the owner objects or where a substantial additional cost would be involved, except where mineral development would interfere with operation of the project or except where required by the provisions of the Atomic Energy Act. Mineral rights not acquired will be subordinated to the Government's right to regulate their development in a manner that will not interfere with the primary purposes.

5. *Buildings.*—Buildings for human occupancy as well as other structures which would interfere with the operation of the project for its primary purposes would be prohibited in the reservoir areas on lands for which an easement is acquired.

6. *Acquisition of lands for collateral purposes.*—No title to land will be acquired for purposes of preservation of wildlife or forests, restoration or replacement of such values destroyed by reservoirs or for creating additional values of like nature, or for recreational purposes, unless specifically authorized by Congress.

7. *Application of policy.*—The above policy will govern the determination as to acquisition of any tract on which title to the United States has not been vested or a final judgment in condenmation has not been entered except for projects on which the land acquisition program has progressed to the point where application of the policy would be unreasonable or to the distinct disadvantage of the United States or to the general public. The application of the principles and criteria outlined above to lands already acquired for reservoir projects by disposal of fee title to former owners will require Federal legislation. Flowage easements will be retained where necessary. All other lands rendered surplus by this policy will continue to be disposed of in accordance with existing laws.

General STURGIS. Where we take an easement in the land, such action will, of course, save to the States a tremendous acreage of land in fee simple subject to our easement. On the other hand where we have bought land in fee simple for the design flood, that has meant taking quite a bit of land that would be available for recreational purposes. We would lease or license it to States or political subdivi-

sions, Boy Scouts and other such organizations or churches, in the various communities.

Mr. RABAUT. General, will you explain for the record what the term "design flood" means?

General STURGIS. Yes; that is to accomplish the demands of the design project to take care of the maximum probable flood that could be expected and still have the water coming through the spillway. In other words, we are able to store the water and let it out rather than allow it to overflow in the channel.

Mr. RABAUT. Then, as I understand, the word "design" means you contain the water to the height of the dam, to the highest amount that you wish to impound. Do you have relationship to that?

General STURGIS. Oh, yes. That is one of the features in determining the height. Then, of course, you have got to have what is known as freeboard. You have to provide adequate freeboard beyond the design flood.

Mr. RABAUT. Thank you.

General STURGIS. In other words, Mr. Chairman, instead of buying fee title to land for the largest known flood, we are only buying fee for the flood which would normally occur on an average of every 5 years. It would be unprofitable to try to attempt to buy an easement in that land, because it would be rather unusual for the owner not to want value for the fee simple taking.

There are certain advantages in having land for recreational purposes, but that would not appear to be the pattern to develop throughout the country, as we now see it. In other words, while there are localities resisting this policy, other localities are favorable to it.

Mr. DAVIS. Certainly those, what we might call auxiliary uses would hardly justify the Government purchasing more land than is needed for the operation of the project itself. I think this new policy is much more in keeping with the general philosophy of taking the land for proper use.

General STURGIS. Yes. Of course, we still are under obligation to provide access to the project, and I think that access is not to be interpreted, and should not be interpreted in a narrow sense, as just a road down to the water. Where we have to handle large numbers of persons as, for instance, 4 million people, such as annually visit the Texoma Reservoir, I do not think that in any sense of the word access would mean just one road down to the water. You have got to provide some space for the people, parallel roads, or parkways, and not just one access road. Access, however, will be much more limited than under the old fee-simple program.

INACTIVE PROJECTS

Mr. DAVIS. During the course of the hearings last spring, General, we had a considerable amount of discussion with General Chorpening, trying to work out a program of deauthorizing many of these obsolete projects, and General Chorpening indicated at that time that the corps was making a serious study of that program, and I gather from your comments, that you expect to be able to have the corps' report available to the subcommittee within the next few weeks?

General STURGIS. Yes; that is my understanding.

Mr. DAVIS. You have mentioned that there are a number of projects going on the inactive list, or deferred list, that you would expect to present to the Public Works Committee, and rejustify those projects before they are put on the active list.

General STURGIS. Yes, when funds are made available to us for use in the study of the deferred projects, we will study the projects in that class in order that we may recommend that they be placed either in the active or inactive categories, and place them in the proper priority for appropriation.

Mr. DAVIS. The ones that you put on the active list would go back back before the legislative committee, where, for all intents and purposes you would rejustify the project before them again.

General STURGIS. Yes.

Mr. DAVIS. Before being subject to any appropriation, for further plans and appropriation.

General Sturgis. Yes.

Mr. DAVIS. If they are on the deferred list, that would be done?

General STURGIS. Yes; that is true.

I think I will call on General Chorpening to tell you about this.

General CHORPENING. I would like to make this comment first, to be sure the committee understands. We have already submitted our report on this to the Bureau of the Budget, through the Secretary of the Army. Our report has been there for several months, and a copy of the report is in the hands of the Public Works Committees, and we could make a copy of it available to the subcommittee, if that is desired.

Now, on the other question: The three categories, active, inactive and deferred for restudy: Those that were classified as inactive in our opinion could be considered for deauthorization.

Those that come in the category deferred for futher study, are the ones that we at this time just cannot be certain that they should in fact be considered active. A number of these were studied some time ago and we do not know the effect of changed economic conditions. If funds are made available for planning and survey studies, they could be restudied and if in fact they are found to be justified, we can recommend to the Public Works Committees that these projects should go on the active list; if they are not justified they should be placed on the inactive list.

Mr. DAVIS. Can you, from your recollection, General, and I know this is going to be difficult to get down close to it, but generally speaking, you have an authorized backlog of somewhere in the neighborhood of $12 billion?

General CHORPENING. Something over $11 billion; yes.

Mr. DAVIS. Do you recall in your recommendation now as to about how that amount would divide up among the three categories you have indicated?

General STURGIS. I have the figures here on a card for projects and project modifications. Active projects, 479 in number, amounting to $4.915 billion. The deferred projects, 151 in number, $2,499,200,000.

And the inactive projects, 283 in number, $1.075 billion. This totals 913 projects not yet started. In addition there are 183 portions of projects or project modifications which are considered deferred or inactive on which some work has been accomplished.

Mr. DAVIS. What do you anticipate, if the Bureau of the Budget approves of your recommendation; do you anticipate that would become the basis for legislation to establish these three categories, or is that something that can be handled as a policy matter within the Corps of Engineers, without legislation?

General STURGIS. We think, sir, as I mentioned in my opening remarks, that legislation would be necessary to set up the system, a different system than the old.

Mr. DAVIS. In other words, the Public Works Committee would be able to provide you, based on a skeleton of your last report, with the way they wanted to handle this transfer from deferred to active. Is that what you would anticipate?

General STURGIS. Yes. I think we even went so far—and I would like to check with Mr. Beard on this—but I think we actually included in our letter of recommendation to the Committee on Public Works the proposed legislative suggestion.

Mr. BEARD. Yes.

General Sturgis. We recommended legislation, but of course, we do not know whether Congress will agree to it, but we recommended a definite procedure. And then you see, each year, we would expect to be called up for what projects are to be classified, in these groups, so as to keep the thinking current. And then as General Chorpening said—on the inactive list some of them might be deauthorized if Congress wishes. And I might say that the suggestion was made to us by the Bureau of the Budget, that deauthorization be on the basis of time since authorizations.

We do not consider that to be the best solution of deauthorization of the projects, because one project may be a good one, and another a poor one. One might have a benefit-cost ratio of 5 to 1, and the other 0.4 to 1.

This other solution we think would be the better one to follow.

LOCAL CONTRIBUTION

Mr. DAVIS. You mentioned, too, General, the matter of the increased local contribution to the cost of surveys and construction, and I would like to ask if you have made any specific proposals in that regard?

General STURGIS. Not with regard to surveys as yet. We still have that one under study, but we did make recommendations with regard to local participation for construction projects and that has gone over to the Bureau of the Budget. General Chorpening can tell the committee the status of where it is now. But we did recommend added local contribution, both with regard to flood control and navigation projects. We are now studying local contribution with regard to surveys.

General CHORPENING. We are well along with that study, and we hope it can be completed within the next month or so.

Mr. DAVIS. Can you tell us in accordance with General Sturgis' suggestion as to what is the status of the proposal with respect to local contribution for construction?

General CHORPENING. Both of the recommendations, that is, the studies of local contribution for flood control and navigation have been submitted by the Secretary of the Army to the Bureau of the Budget.

Mr. DAVIS. Before we leave this matter of local contribution; we understand the Bureau of the Budget has suggested possibly $5 million appropriation to provide Federal cooperation with local interests in water-resources development. Can you inform us as to what the status of that proposal is, General?

General STURGIS. I am sure that has been done, but I would like to ask General Chorpening to comment on that, because he is much more familiar with it.

General CHORPENING. My information, which is informal from the Bureau of the Budget, is that the setting up of that item will be the beginning of the program of the Federal Government to participate in projects where there is a Federal interest, but where, perhaps, the preponderance of interest may be local rather than Federal. I might illustrate that. It may be some members of the subcommittee are familiar with the legislation that is now before the Congress on the Markham Ferry project in Oklahoma. This is a multiple-purpose project, where there are some flood-control benefits. By consultation between our field offices and the Grand River Dam Authority, which is a State agency, it has been concluded that—I think the figure is $6 million—would be a fair contribution by the Federal Government, to cover the cost of the flood-control value in the project. Does that answer the question?

Mr. DAVIS. Yes.

Mr. CEDERBERG. I think one of the questions that probably is involved with respect to local contribution is, just what do you mean by the term "local benefit"; is it local to the State, or the local area, or just how does it become local? I think there is a lot of difference involved in the definition of what constitutes a local protection.

General STURGIS. I am aware, Mr. Cederberg, of the fact that you asked similar questions last year. I have reviewed the testimony on that. I would say that one of the factors which determines whether it is really local, is where a local community is affected. Of course, under the law, as you know, no local contribution is required for flood-control reservoirs. In reading the hearings of last year I noted that you pointed out the fact that a farmer whose land is protected from floods by a local protection project, such as a levee, has to make a contribution whereas a farmer below a dam has to pay nothing whatever.

Mr. CEDERBERG. That is right.

General STURGIS. And may I say that when you consider the valuable effect of a fairly large dam, through a State, and into the next State, it would be almost impossible to assign local benefits in a way that a flood-control district could contribute. As a practical matter that would almost rule out starting a project, because you could never overcome that problem.

Mr. CEDERBERG. I can appreciate that.

General STURGIS. Therefore we might say that as far as a practical determination is concerned, as I phrased it in my opening remarks, we are recommending local contributions on the basis of local determinable benefits. That is the criteria.

Mr. CEDERBERG. One of the examples that I wanted to bring out was the fact that it is very difficult, but so far as the Corps of Engineers is concerned, there is nothing it can do; it has to follow the law.

General STURGIS. Yes.

Mr. CEDERBERG. For instance, a man out in Michigan will pay for local protection, because he has got to provide the funds to meet his problem. Yet down below there may be just as much flood on the land of the other man, and he may get just as much protection, but makes no contribution. There may be a large reservoir like the Detroit Dam, somewhere, and as I recall General Chorpening went into the matter, and the power was indicated to be almost incidental with the flood-control benefits that will accrue to the people down in the valley. In other words, they could not justify the project on power alone, but that it can be justified on the basis of flood control. The Federal Government is paying the entire cost for the benefits to this area, and it would seem to me that the local people should participate. As I indicated, the corps has to follow the law and that does not lie within your discretion.

General STURGIS. I do not doubt that the question will be brought up by the Hoover Commission in determining what projects should be developed and to what extent the interest is Federal. But I think the major obstacle is the one you mentioned.

Mr. CEDERBERG. I agree.

General STURGIS. First, the practicable feasibility of assigning benefits.

Mr. CEDERBERG. I agree, that is true.

General STURGIS. You recall the Huntington floodwall, which was built in 1938 or 1939, and I suppose today that whenever a flood comes, they are pretty well satisfied that it is of benefit to the city of Huntington. There is no question about the benefits. They have had some 18 floods there since it was built.

Mr. CEDERBERG. I do not like to interrupt, and I do not know if this is the appropriate time, Mr. Chairman, but I was looking over page 11 here, with respect to channel improvement and flood control to this local area. The report so far indicates that the local interest generally rejects the proposal. In other words, that they are not interested in putting any money in it. I think probably one of the best ways to find out whether they are interested is by finding out whether the local interests are willing to put up any funds for it.

General STURGIS. Well, I suppose what I am saying in this case would not be quite the same, but certainly if the matter were put up to those people with respect to local contribution, whether they wanted to buy the project, they would probably say "No."

Mr. CEDERBERG. I can easily see that a retroactive responsibility is never received as willingly as a retroactive benefit.

LIMITATION ON EXPENDITURES

Mr. DAVIS. General, you mentioned the limitation on expenditures, in your testimony about 1954. What do you foresee for fiscal year 1955?

General STURGIS. I would like to pass that one on, if I may, to General Chorpening or one of the other people, because they are much more familiar and have more detailed knowledge of it.

General CHORPENING. I do not know if I am entirely clear on your question, Mr. Davis.

Mr. DAVIS. I understand the Bureau of the Budget did place some limitation of expenditures for the 1954 fiscal year; did it not?

General CHORPENING. It was not a limitation, sir, it was more a matter of reducing expenditures as much as practicable.

Mr. DAVIS. How did that affect you?

General CHORPENING. The cutback in obligations was about $41 million, and actually that has not too seriously affected our program in this fiscal year. Last fall, we studied all of our programs, and all of the funds available, to determine at that time what progress we were really making, and whether we would have to actually program our expenditures of the funds at that time, without unduly disturbing any of our projects.

We were able to find what amounted to approximately $41 million at that time that would probably not be required under the reduced expenditure program.

I might say that in the impounding of that money we were advised by the Bureau of the Budget, that if we really needed it, we could come back to them and perhaps get a favorable response on a request for it.

Mr. DAVIS. Have you been given any expenditure limitation on your 1955 appropriation?

General CHORPENING. Yes, our expenditure target is $525 million in this fiscal year.

Mr. TABER. 1954.

General CHORPENING. 1954.

Mr. DAVIS. Have you been given any for 1955?

General CHORPENING. No.

Mr. DAVIS. Do you anticipate you will get one for 1955?

General CHORPENING. I have no information on that. Of course, it would hardly be feasible until such time as the appropriations for fiscal year 1955 are made, I have not heard any discussion of such a limitation being placed on fiscal 1955 funds.

STATUS OF BASIN AUTHORIZATION AND APPROPRIATIONS

Mr. DAVIS. Will you insert in the record at this point, General, a statement showing the status of the basin authorization and appropriations?

General CHORPENING. Yes.

(The information requested follows:)

Status of basin authorization and appropriations

Basin or project	Present estimated cost	Monetary authorization	Appropriations through fiscal year 1954
Connecticut	$171,169,700	$72,957,000	$35,053,000
Savannah (Hartwell Reservoir)	90,637,000	50,000,000	815,600
Central and Southern Florida	96,345,900	36,300,000	18,774,000
Arkansas	524,527,000	288,573,000	106,011,300
White	266,453,000	169,000,000	121,128,000
Upper Mississippi	339,179,400	44,300,000	24,715,000
Ohio	1,696,430,400	657,634,500	474,924,200
Missouri	1,549,412,900	616,000,000	517,033,800
South Platte	62,506,000	26,300,000	
Kaweah and Tule	29,170,600	4,600,000	744,800
San Joaquin	65,751,000	10,500,000	7,891,300
Sacramento	120,653,000	18,500,000	2,588,900
Los Angeles	363,265,500	197,541,000	147,793,400
Santa Ana	55,033,400	55,500,000	23,553,900
Columbia	1,905,766,800	267,300,000	232,991,600
Quachita	46,614,000	21,300,000	
Arkansas (navigation)	885,673,900	70,850,000	14,671,000
Alabama-Coosa (navigation)	224,271,300	60,000,000	1,694,600
Russian River, Calif	15,250,200	11,522,000	326,000

DATA ON HYDROELECTRIC POWER INSTALLATIONS

Mr. DAVIS. Also, insert in the record data on hydroelectric power installations.

(The data is as follows:)

Data on hydroelectric power installations at Corps of Engineers projects

Project	Present installed capacity (kilowatts) [1]	Additional proposed installations (kilowatts) by fiscal years						Installations after fiscal year 1959
		1954	1955	1956	1957	1958	1959	
Projects in 1955 budget estimate for construction:								
Blakely Mountain, Ark			75,000					
Jim Woodruff, Fla			30,000					
Buford, Ga						86,000		
Clark Hill, Ga. and S. C	160,000	80,000	40,000					
Albeni Falls, Idaho			42,600					
Gavins Point, Nebr. and S. Dak					100,000			
Garrison, N. Dak			80,000	160,000				160,000
Lookout Point, Oreg			129,000					
McNary, Oreg. and Wash	140,000	140,000	280,000	280,000	140,000			
The Dalles, Oreg. and Wash							312,000	936,000
Fort Randall, S. Dak		80,000	120,000	120,000				425,000
Oahe, S. Dak. and N. Dak								
Cheatham, Tenn					12,000	24,000		
Old Hickory, Tenn				25,000	75,000			
Chief Joseph, Wash				256,000	128,000	256,000	256,000	384,000
Subtotal	300,000	300,000	796,600	841,000	455,000	366,000	568,000	1,905,000
Projects in 1955 budget estimate for advance engineering and design:								
Fort Gaines, Ala								130,000
Hartwell, Ga. and S. C								300,000
Fort Peck, Mont. (2d powerplant)	85,000							80,000
Libby, Mont								600,000
Hills Creek, Oreg								20,000
Carthage, Tenn								92,000
Ice Harbor, Wash								260,000
Subtotal	85,000							1,482,000
Projects not in 1955 budget estimate:								
Bull Shoals, Ark. and Mo	160,000							160,000
Narrows, Ark	17,000							8,500
Norfork, Ark. and Mo	70,000							70,000
Table Rock, Ark. and Mo								200,000
Allatoona, Ga	74,000							36,000
Wolf Creek, Ky	270,000							
St. Marys River, Mich	16,400	2,000						
John H. Kerr, N. C. and Va	204,000							
Denison, Okla and Tex	70,000							105,000
Fort Gibson, Okla	45,000							22,500
Tenkiller Ferry, Okla	34,000							
Bonneville, Oreg. and Wash	518,400							
Detroit, Oreg	100,000	18,000						
Center Hill, Tenn	135,000							
Dale Hollow, Tenn. and Ky	54,000							
Whitney, Tex	30,000							
Philpott, Va	14,000							
Subtotal	1,811,800	20,000						602,000
Total	2,196,800	320,000	796,600	841,000	455,000	366,000	568,000	3,989,000

[1] As of Jan. 1, 1954.

Also insert in the record the status of the construction program. (The information is as follows:)

Status of "Construction, general" active program

I. Projects in construction stage:[1]	
Total estimated Federal cost	$5, 949, 376, 200
Appropriated through fiscal year 1954	3, 559, 731, 000
Balance to be appropriated	2, 390, 645, 200
II. Projects in active planning stage or on which no planning is required:	
Total estimated Federal cost	1, 985, 409, 200
Appropriated through fiscal year 1954	14, 954, 500
Balance to be appropriated	1, 970, 454, 700
III. Total estimated Federal cost of authorized projects on which no construction work has been accomplished or on which no planning is in progress	[2] 2, 917, 605, 500

[1] Includes all projects in the active program for which construction funds have been appropriated. Eighty-four of the projects or project modifications in this category are not presently under construction and have no funds available for continuation of construction work.

[2] In addition, projects with an estimated cost of $3,702,000,000 to complete are not considered in an active category.

NOTE.—The remaining monetary authorization applicable to the unappropriated balances for projects in the "Construction, general" program after fiscal year 1955 is $3,718,700,000.

REVENUES FROM PROJECTS

Mr. DAVIS. And place in the record the statement of the revenues of the Corps of Engineers projects.

(The matter referred to is as follows:)

Revenues from Corps of Engineers projects

Item	Fiscal year 1949	Fiscal year 1950	Fiscal year 1951	Fiscal year 1952	Fiscal year 1953
Power receipts	$11, 046, 700	$11, 754, 206	$13, 930, 344	$19, 954, 027	$19, 561, 583
Lease of flood-control land receipts	139, 500	188, 797	270, 657	275, 847	329, 628
Miscellaneous receipts	617, 100	661, 245	623, 474	599, 601	677, 494
Total	11, 803, 300	12, 604, 248	14, 824, 475	20, 829, 475	20, 568, 705

COST EXPERIENCE FOR MAJOR PROJECTS

Finally, please place in the record a statement showing the average cost experience.

(The matter referred to is as follows:)

The following table represents actual average cost experience for major contracts let throughout the country during the years indicated. The unit costs shown should not be considered as applicable averages for the projects in the budget estimate, since they are based on the limited number of contracts actually awarded and are not representative of the varied types of work involved in the construction of civil works projects. For example, the unit cost for common excavation for 1953 is mainly for excavation work involved in large mass, low-cost spillway and approach channels for reservoirs located principally in areas where year round construction seasons prevail. Rock excavation experience in 1953 is based on only a few contracts not dominated by powerhouse work and includes the removal of less difficult limestone formations. Conversely, the unit cost for mass concrete is based on experience of only 3 projects, 2 of which are located in a high-cost area and the third on which high bids were received.

Item No.	Item designation	Unit cost for the calendar year 1952	Unit cost for the calendar year 1953
1	Common excavation.....cubic yards..	$0.57	$0.47
2	Rock excavation.....do....	4.58	3.05
3	Borrow excavation.....do....	.38	.30
4	Embankment.....do....	.10	.13
5	Reinforced concrete class I, thin sections, small volume, floor slabs, bridge decks.....cubic yards..	79.20	78.25
6	Reinforced concrete class II, moderate sections, retaining walls, conduits.....cubic yards..	50.80	50.90
7	Mass concrete.....do....	15.20	18.90
8	Reinforcing steel.....pounds..	.14	.14
9	Structural steel.....do....	.23	.25

COLUMBIA RIVER BASIN

Mr. DAVIS. We understand the recurring problem in the Columbia River Basin. What do you plan to do about that this year?

General STURGIS. We have asked for an additional increase in authorization, in the omnibus bill for this year.

Mr. DAVIS. Then, if this subcommittee, in a desire to act very promptly upon this request this year, were to try to insert some authorizing language in the appropriation, we are held up again until the legislative committee has acted with respect to the Columbia Basin authorization, are we not?

General STURGIS. Would it be possible to have an informal arrangement with the Public Works Committee, that is, to get the intent of the committee concerning the granting of an increased authorization?

Mr. DAVIS. Well, I do not like to have to act merely on that, but we may have to work out something of that kind, unless we delay the entire appropriation.

FEDERAL RENT CONTROL AND THE M'NARY DAM PROJECT

In some place during the time of the hearing last year it was indicated there was still Federal rent control in effect, particularly, I believe at McNary, that has since disappeared, and has there been any change in your rental policy at McNary?

General STURGIS. Yes. In some of the rent-control areas they are raising the rent in order to be consistent, and recommendations have been made for decontrol. General Chorpening will tell you about that. But I would like to indicate to you my interest in this whole connection, of raising rents commensurate with the facilities being furnished, and I initiated that while I was out in the Missouri River division, because of the discrepancy existing between the facilities furnished and the rental being paid. I have a great deal of interest in it. General Chorpening can tell you about the particular areas, and I think that does include the McNary Dam area where they have been put on a decontrol basis. General Chorpening, will you specifically answer the question?

General CHORPENING. Yes.

With reference to rent control, all areas have been decontrolled, and the new rates had gone into effect in all areas by January 1 this year. Specifically at McNary 649 of the units available there last year have been vacated and are being disposed of. The project

requirements are going down with respect to the number of people and the rental rates for the remaining 206 units were increased approximately 24 percent on the reappraisal of the rates, and on the decontrol taking place.

CONSOLIDATION OF DISTRICT AND DIVISION OFFICES

Mr. DAVIS. I understood you to say, General Sturgis, you had deferred making any specific recommendations with respect to the possible consolidation of the district and division offices for the time being. Is that correct?

General STURGIS. For the time being, except what we did in connection with the consolidation between the north and northeast districts, which was not affected by the other factors I mentioned. With the end of the Korean war the problem of consolidation becomes more difficult. I suppose no one knows right at the moment what the effect of the ending of the war will be but we think there will be a period, with an armistice, during which there might be a need for additional projects and programs, and we felt that it was not the time, with the very indefinite information available, to make consolidations, and that we might have a reversal in another 6 months, which would make it very difficult for the personnel involved.

That is the reason why, among other factors mentioned, that we deferred a finalization of our plans at this time.

Mr. DAVIS. You do have firm recommendations for some consolidation if it happens that things are going to level off with the military and civil construction at no higher level than is now the case?

General CHORPENING. Yes, if things stay as they are, we have worked out tentative plans, but we do not feel we should put them into effect at this time. For instance, until we have had a chance to study all the factors for 1954, and 1955, and see just where we were going, we do not think it advisable to make any consolidations.

Mr. DAVIS. When did you consolidate the north and northeast offices?

General STURGIS. I think that became effective in December, did it not?

General CHORPENING. That is correct.

Mr. DAVIS. One final question: Last year, that is, in this current fiscal year, my recollection is that there was an appropriation of $79 million for maintenance and operation. Has this expenditure limitation affected that amount?

General CHORPENING. No, sir.

General STURGIS. If I may just add this: I have done a great deal of traveling and inspection out in the field, and down at the Warrior River lock No. 8 we are keeping that lock open 24 hours a day, 7 days a week, with 4 men.

Mr. DAVIS. We recognize that you have a great many problems in that respect, by virtue of what might be determined niggardly appropriation, during the Korean period. That was a very good job on that. The subcommittee, as you perhaps will recall, last year appropriated the amount that was requested in order to help you out.

General CHORPENING. And we appreciate that very much.

LOCAL CONTRIBUTION

Mr. HAND. General, it has been my experience that there is not too much rational relationship between one of these projects and another, so far as local contribution is concerned. One local project may receive substantial contribution, and another will get very little. There are certain multiple projects, of course, that require no contribution. I think the problem, at least, so far as navigational projects are concerned, there might be some thinking about contributions from some of the services, shipowners, where the local benefits are very obvious.

I want to get a little clearer in my mind just where the report you referred to is. Have we gotten any further than some recommendation from the Bureau of the Budget, or just where do we stand? Did you recommend any changes in the overall situation with respect to local participation?

General STURGIS. Mr. Hand, we have submitted two detailed ones—one on flood control, local contribution, but exactly where it stands and what action has been taken, I do not know. I think it has reached the Bureau of the Budget.

As you know, at the present time, one of the prerequisites of the 1936 act, calls for land, rights-of-way, operation, and maintenance. The recommendation has been in the field of enhancement of land values. In other words, where there has been an actual enhancement of the land we feel that there is an area in which the local interests should pay if the land will enhance in value. And as I recall, I think we recommended something in the neighborhood of 50 percent to be paid by the local interests for the land enhancement on these projects.

I am sorry I am unable to tell you, beyond the Bureau of the Budget, where the report is. I do know from informal information, that the Hoover Commission, the task force under Adm. Ben Morreel is also studying the same problem, and I might say that the Hoover Commission group has asked us to put a member of the Corps of Engineers in their office, and we have provided the specific individual they requested. He is on duty in their office, even though it is a difficult time to give him up.

Mr. HAND. Has the entire personnel of that Commission been established, the one which is studying the water resources problem?

General CHORPENING. Yes, the one under Admiral Morreel.

Mr. HAND. So far as you know they are functioning?

General STURGIS. Yes.

Mr. HAND. It would be assumed that the report you have made, and I think you mentioned it was in the hands of the Bureau of the Budget, would go from the Bureau of the Budget to the Public Works Committee which would have the responsibility for any changes in the law that needed to be made in that connection?

General STURGIS. Yes, it would go to the Public Works Committee.

Mr. HAND. Would it be inappropriate to ask that the report be made available to this committee, even though we do not have any legislative responsibility? It might be of interest to use in our study.

General STURGIS. I certainly see no reason why it should not, Mr. Hand. I can make it available.

Have you any reason to believe that the Bureau of the Budget would not want that released, General Chorpening?

General CHORPENING. I do not think so; no, sir; we could inquire.

General STURGIS. It is only a recommended policy, sir.

COST ALLOCATIONS

Mr. CEDERBERG. General, I want to make a couple of very general observations:

First, I want to say this, that I enjoyed very much the opportunity of going with this committee last September and visiting a number of your projects from Kansas City up through the Missouri and Columbia Basins and down into California. It was most enlightening to me and I was amazed, even though I had listened to the testimony before, at some of the tremendous projects that you have going out there, referring mostly to the multipurpose projects in which you have power and all the other added things with it.

I am also happy to note that you are coming closer to an agreement on some of the cost factors involved with the Interior people and the Bureau of Reclamation representatives.

I also hope that this agreement that is being entered into will be such that it will be to the benefit of all of the taxpayers of the United States and not just a few who are going to receive some of the very fine benefits from the low priced power out in the very far Northwest and in the other areas. I am aware of the need, but I think a cost allocation has to be much more realistic than they have been in the past, and I hope everyone will come out just a little bit better when the final figures are in.

General STURGIS. I might say, sir, in that connection that I have received the greatest cooperation from the Department of the Interior since the start of our conferences on that subject.

The cost allocation is made by the Corps of Engineers by the method that I indicated. The separable cost-remaining benefits has not necessarily been followed by the marketing agencies, because they have factors that they have to take into consideration too, which we should study, but when we get together we will have a much more realistic allocation, particularly in regard to power, and it will, no doubt, increase power rates. So, I think it will achieve what you have in mind, sir.

Mr. CEDERBERG. That is fine. All I think that anyone is interested in is a fair and accurate appraisal of the cost and that they be properly allocated.

General STURGIS. Well, I am sure, from what Secretary Tudor said when we first began these conversations, he felt that the past practice of not following the Corps of Engineers allocation for power—or, at least, one that was close to our method, considering their factors that they might introduce, that it had been inconsistent, and that is what impelled the Department of the Interior to get together with us on our cost allocation, or on the subject of cost allocation for both agencies.

Mr. CEDERBERG. Thank you.

Mr. TABER. I notice in your statement that you were very solicitous about having the funds advanced for planning that you have requested.

I wonder why, in getting up a schedule of what you want to plan, you put in such projects as the Davenport Center Dam which has been thrown out by this committee and the Congress before. I cannot understand that approach. Frankly, the committee does not do those things and the Congress does not do it without knowing what it is doing.

General STURGIS. Well, sir, in connection with the flood protection up there, as you may know, as far as the Mount Upton Dam on the Unadilla, we have at the present time suspended any action on that project. In the upper Susquehanna system, for the protection of, I believe, cities such as Binghamton and downstream, the Davenport Center Dam is an economically justified project and will produce favorable benefits in the lower rivers.

I believe that that whole system was started, after the floods that occurred in 1936 and 1937 when we established the Binghamton District, and I, personally, was not aware that the committee had rejected it time and again. So, I am unable to comment on that.

Mr. TABER. Well, I am aware—very much aware—of that situation.

General STURGIS. Yes, sir.

Mr. TABER. They did not do it without knowing what they were doing; I will say that to you. I think there should be greater care, for the sake of maintaining the reputation of the engineers, than there has been in attempting to embark upon a lot of projects. I feel I am doing you a favor when I call your attention to that kind of a situation.

General STURGIS. Well, I can say this, sir: that besides the economics of a project, we certainly acknowledge that there are other factors involved. If the majority of the people in a given area were against a specific project, in spite of its highly economic justifications, as long as I am Chief of Engineers, I would certainly not give my approval to recommending it to the Congress.

Mr. TABER. I think you would have a difficult job justifying this project from an economic standpoint with any fair-minded group.

I have raised this question and I would like to have you get into these things a little bit more carefully before you come up here.

General STURGIS. Well, sir, we reevaluate the economics of projects from time to time. In other words, if a project was authorized in 1938, we would not recommend that project today, without going into the justification of it again to see if it is still economically justified. We would investigate the costs of engineering and construction and other factors that affect the economics of a project, to see that they have not changed so markedly as to seriously affect the economic justification. I believe that that was done in connection with this project. I would like, however, to check with General Chorpening, to see if he can answer that question.

General CHORPENING. That is correct. There has been quite a little work on planning done on this project since it was authorized, and we consider that the present benefit-cost ratio, which we determine as something over 2.0, is entirely sound.

Mr. TABER. If you do, I think there must certainly be something questionable about the basis for your ratio.

Mr. RILEY. General, I want to congratulate you too on the statement that you have made, and the progress you have made in getting the coordination of the various departments in this water resources program and in getting their cooperation. I think it is extremely bad for everyone concerned for people to bid against themselves, and that is what we have been doing to a certain extent.

If I understood you correctly, there are some 20 new projects to be started this year; is that correct?

General STURGIS. Yes, sir. After we had submitted our "within ceiling" and "over ceiling" recommendations to the Bureau of the Budget, it was indicated to us by the Bureau of the Budget that approximately 20 new projects could be started this year with certain criteria that the Bureau of the Budget furnished.

Mr. RILEY. The Bureau of the Budget furnished the criteria?

General STURGIS. Yes, sir.

Mr. RILEY. These projects, then, were not selected on the economic justification rating that the engineers gave them?

General STURGIS. That was one of the factors, yes, sir. They had to be economically justified projects, but the Bureau of the Budget definitely did not want them to be large multipurpose projects. They wanted them to be of the smaller type of project. They gave us, as I recall it, a limitation on the total composite cost of the projects so as to make them smaller in nature and have less impact, long-range impact, on the budget structure.

Mr. RILEY. I see, but the point that I am interested in right now is whether or not these projects were taken in the order of their priority rating?

General STURGIS. I am sorry; I did not hear that question.

Mr. RILEY. Were they selected in the order of their priority rating? Did you make a list of the projects that you thought had the highest economic justification and present a list and then did they take the ones in the highest rating?

General STURGIS. Not altogether in accordance with the economic ratio, sir, because other factors come into the priority of projects. What we did was select a combination, following the Bureau of the Budget criteria in selecting the projects. We were to select projects that were ready to go. In other words, we might have had projects that were still in the status of being designed and yet had a very high benefit ratio, as opposed to the projects where the planning had been completed.

Mr. RILEY. What were some of the criteria other than economic justification rating that entered into it? Was it the fact that they were planned and ready to go?

What other factors entered into the selections?

General STURGIS. As I said, the amount was given us to which their total cost would have to add up.

I would like to ask, if I may, General Chorpening to give you that figure and the other criteria that were used.

Will you please do that, General Chorpening?

General CHORPENING. Yes, sir.

Mr. RILEY. In other words, as I understand it, they had to come within a certain price range, is that right?

General CHORPENING. It was done in this fashion: we had in our "overceiling" request to the Bureau of the Budget, requested quite a number of new starts. We were then advised by the Bureau of the Budget that they would like to give consideration to some of the new starts, but they gave us a limiting figure and stated that they would like us not to exceed a certain total cost. Another limiting figure that we were to hold to was the amount required to start them—and also that the number of projects was to be around 17 to 20. Then taking those projects that we had recommended overceiling, we made a selection from all of them to meet those further criteria established.

General STURGIS. Was there not an amount something like $110 million?

General CHORPENING. The amount was $100 million, as I recall it, plus or minus 10 percent, and $17 million originally for this fiscal year's budget. That was modified somewhat on the basis of further conferences with the Bureau of the Budget.

Mr. RILEY. In other words, do I gather from that that these projects would average $5 million or $6 million each?

General CHORPENING. In total cost; yes, sir.

Mr. RILEY. So, it does have to come within a certain price limit—the criteria under which you are having to make these selections?

General CHORPENING. Obviously, we could not, sir, take large projects or we would have used up all of our $100 million, plus or minus 10 percent, on one project.

General STURGIS. It included resumptions. One of them which I may mention is the Dillon Reservoir which runs about $27 million total cost. We already have an investment in the ground at Dillon. So that, while in effect, there was a price range, it was not a limit of $5 million or $6 million, even though they averaged $5 million or $6 million.

Mr. TABER. The Dillion expenditures were entirely in connection with a railroad relocation. I understand that they have done nothing on the dam to amount to anything; is that not right?

General CHORPENING. That is essentially correct; yes, sir.

Mr. RILEY. There are new starts, then, as I understand it, here of multipurpose projects?

General CHORPENING. No, sir.

Mr. RILEY. It involves only those that have had some work done on them and on which it is economically beneficial to continue?

General CHORPENING. Yes, sir; none of the dams that are being resumed are multipurpose; they are straight flood-control dams that we are talking about. There are no additional hydroelectric projects in this list of resumptions or new starts.

Mr. RILEY. Will you continue some of the projects that are now under construction?

General CHORPENING. Yes, sir.

General STURGIS. But not as new starts.

PURCHASE OF SHORE PROPERTY

Mr. RILEY. Did I understand you to say, General, that the Government is not going to own the land beyond the high-water mark of these lakes for the purpose of letting the individual own the land down to the high-water mark?

General STURGIS. Sir, I said we would only own in fee simple that land which contains the conservation pool and the 5-year flood frequency. Now, we are only buying that land within the reservoir area where during the average 5 years the water would come up at least once during that time. Of course, you might get 2 or 3 floods of that nature in 5 years, and the reason that we did that, as I explained a few moments ago, is because if you bought that land—I mean if you took an easement only on that land, you would practically have to pay the fee-simple value of the land because it would not be worth much to the owner if it was flooded that frequently.

Mr. RILEY. The thing which concerns me is that, as I recall, we had considerable testimony last year that the Government was receiving quite an income from this shore property by renting it out or leasing it to people, or renting it to people for cottages along the shore and fishing docks and boat docks and things of that nature, concessions, and so forth. So, it would seem then that the project would not amortize, probably, as fast as it would under the old order of things.

General STURGIS. Well, sir, while it is true that you have that income, you also put a great deal of capital into the buying of the land that would produce that income.

Mr. RILEY. Do you have any figures on that? What has been your past experience? My guess would be that a lot of individuals would buy that shore property and make good money out of it.

General STURGIS. Well, that is probably true where the land is so located with respect to the lake created by the reservoir that it could be economically developed.

Mr. RILEY. If the Government is going to build the dam, I think they ought to have something to try to amortize the cost of it and not give that to some individual who never heard of it who slips in there and buys the shore property.

General STURGIS. Our proposition is not to buy the property in the first place, but merely to take an easement on it from the existing owner so as not to disturb the present ownership. Owners would like to retain the ownership of the land, but they would be perfectly willing to grant an easement on it, permitting us to flood it, but they would like to own that land.

Mr. RILEY. I believe your capital investment would be amortized in a very short period of time. Of course, you have the figures on it, but I think it would be well, based upon my own personal opinion for a study to be made of just what your income has been from that type property, because you have created a value there that did not exist before. Down in my section of the country, people pay real money for those locations.

General STURGIS. Yes, sir, that is true but, of course, a part of the criticism that has been raised is that we are not empowered, under the law, to make an investment for purposes of gettng a return from recreation.

I am not able to give you, offhand, what our experience is in that regard. I have had isolated experience where there is no question about it in certain areas like, say, the Kanopolis Reservoir in Kansas we have been able to lease the reservoir lands we have there in fee simple for grazing purposes and so forth and have obtained a good return, but, under the law, 75 percent of that goes back to the State.

We feel that we do not have unlimited authority to invest public funds for purely recreational purposes or revenue for the Government even if that revenue would be a very attractive thing for the Government.

Mr. RILEY. How have you gotten by with it in the past? It has been done?

General STURGIS. Well, sir, that has been part of the criticism. In other words, part of the criticism has been that buying the total land up to the design flood level in fee simple, by that action we have taken more land than necessary and have been using that land—portions of it—that I mentioned a little while ago in the testimony for leasing it out to public agencies, churches, Boy Scouts, and so forth. However, at the same time it has, more or less, been the desire of the Congress, as we interpret it, that the recreational features around a reservoir be locally developed by municipalities and by States to the maximum extent. So, our new land policy is in accordance with that although we know there is some difference of opinion throughout the country on the question of the new policy.

Mr. RILEY. Individuals object to it. The State would not object if they are getting three-fourths of the income to apply to their schools and roads and other things which they will have to maintain in that area, due to the development which is bound to come.

General STURGIS. I would like to cite one example, and that is down in Texas. There the State, I think, is largely behind the people, and some of the people are most vociferous in their demand to retain the land around the reservoir in private ownership and we have received criticism down there in the past few years because of our prior policy.

Mr. RILEY. General, I would not blame a single individual for trying to hold it, because, as I say, you have created a tremendous increase in the value of the land and if I had some land, I would like to hold it too, but I think the public has an interest that overshadows the individual. In addition, how are you going to handle your pollution problem? You have a pollution problem around the lakes. For instance, suppose some individual comes in there and builds a paper mill along the shore of the lake, you have no way to protect yourself.

General STURGIS. Our easement would protect us. The nature of the easement would be such to protect against any permanent establishment that would do that, or even a permanent habitation, because of the fact of the danger involved of there being a sudden inflow into the reservoir from a storm. We would not want to have permanent habitations down there where there might be loss of life or where there might be debris from certain types of light structures where it could fall into the reservoir. The easement would protect us, I believe, sir, in those cases.

Mr. RILEY. You will have to be pretty generally careful about that. As I recall it, my State had to pass some special legislation in regard to several lakes that were developed down there by the State power authority, as they had had a lot of trouble with it.

General STURGIS. Well, it was not an easy step to take, sir, but we think, because there are pros and cons on the matter, and it appears that the pros outweigh the cons at this time. However, I am not in a position to state that we have really heard the full implication of the impact of the new policy as yet.

Mr. RILEY. Is that a policy originated by the Engineers or by some higher authority?

General STURGIS. Well, we were asked to initiate it by the Secretary of the Army and we thoroughly felt that the policy we recommended was a justifiable one, sir.

Mr. RILEY. It does constitute a very positive change?

General STURGIS. Definitely, it is a positive change; yes, sir.

Mr. RILEY. I would like to have some figures on the cost of the land. You might spot check some of these places in that regard and then your income from it and your experience on your pollution and the protection of your lake.

General STURGIS. We would be very happy to get up such information, sir, and we will try to make it as an average.

Mr. RILEY. It would be most interesting to me.

(The material referred to above has been submitted to the committee.)

Mr. CEDERBERG. General, as I understand it, the only difference is instead of taking enough land to provide for design flood, you take such land for a 5-year flood?

General STURGIS. The design flood does not change, of course, but we only take in fee simple.

Mr. CEDERBERG. For the 5 years?

General STURGIS. It is public ownership as opposed to an easement in regard to the land which would be covered by the 5-year flood.

Mr. CEDERBERG. And, previously, we bought it all?

General STURGIS. Yes, sir; we bought it all.

General CHORPENING. And the other land involved, we are now taking easements on it.

Mr. CEDERBERG. The easement has to be drawn up by you with certain stipulations as to the use of that particular land in between?

General CHORPENING. Yes, sir; there is a certain limited use of that land, and the flowage easement will give the owner certain rights which should be of value to him.

Mr. CEDERBERG. Would not that be much the same as these easements which we get at the end of runways and so forth, in military construction?

General CHORPENING. Yes, sir.

Mr. CEDERBERG. Would it not do the same job?

General CHORPENING. Yes, sir.

Mr. CEDERBERG. What I fail to see is how this recreation gets involved too much in here?

General STURGIS. Well, because under the old policy when we bought land in fee simple, we would take a certain headland over here that was a very attractive place and which was wooded and that would belong to the United States, and we would lease or license it, say, to a church, if they asked for it, or to a Boy Scouts camp. What we now do is that the ownership in that headland still remains with "John Q. Smith" and all we buy from him in that upper part of the reservoir area is the right to flood his land should the design or subsequent or lower floods occur.

Mr. CEDERBERG. For recreational purposes, it is not of any value until you get right down to where the water is, at the edge of the lake, is it?

General STURGIS. Yes, sir.

Mr. CEDERBERG. That is where your value really starts?

General STURGIS. Yes, sir; and the original owner would own down to, not the water's edge but to the line which represented the 5-year flood frequency about that. That still gives us a balance of area that we can use for recreation, but it is not always the desirable part, as you can see.

Mr. CEDERBERG. In other words, you would not want to go in there and build a Boy Scouts camp because it might get flooded out?

General STURGIS. That is right, whereas you may want to put it up at the top of the hill, or a man might want to make an investment in a trailer park, for instance. If he owns the land, he gets the benefit of the project, whereas the people down in the valley whose land was acquired in fee—many of them do not want to move, in spite of the fact they are paid a fair market value. So, you have a policy that lets the citizen retain, insofar as possible, the benefits in the land that they own.

Mr. DAVIS. And thus keep the land on the tax roll?

General STURGIS. Yes, sir.

Mr. RILEY. I think the State will get just as much benefit from it under the old policy as they would under this policy, and the fact remains that you have taken some land for public use from the people, creating a loss and a hardship on them and building up the land of other people who happen to live just off the shoreline.

Mr. CEDERBERG. As I understand it, you are only taking a lease from them.

Mr. RILEY. That is not the way that I understand it.

Mr. CEDERBERG. Within the 5-year design flood, you are buying that in fee simple.

General CHORPENING. Yes, sir.

Mr. CEDERBERG. Those people just happen to be in the area where their ground is going to be flooded?

General CHORPENING. Yes, sir.

Mr. CEDERBERG. It does not belong to them unless they buy it. It is a question of whether the Corps of Engineers needs it do do the job and if the 5-year design method will do the job better than the 50 year.

Mr. RILEY. They ought to control it.

Mr. CEDERBERG. They control it by easement rights.

Mr. RILEY. I have tried to stay openminded on it, but I will have to be convinced.

General STURGIS. Also, as this property does enhance in value, it becomes an increasing source of revenue to the taxpayers—to the local government as well.

Mr. RABAUT. What is the situation with regard to the responsibility of the Government or the liability of the Government under the two systems?

RESPONSIBILITY OF GOVERNMENT

General STURGIS. Well, we think that we are sufficiently protected under the one that we mentioned, sir, where we take the land in fee simple up to the 5-year flood and an easement which covers our right to flood in perpetuity up to the design flood.

I might say, if my recollection is correct, when we first started flood-control reservoirs after the 1936 act, we originally went largely

to easements only. I think that was changed about 1941 or 1942—somewhere in there—and we began to buy it in fee simple, because there were certain advantages. But, as I said in my opening remarks, you have a new thinking and a change of philosophy on things and this is one of the outcomes of that change of philosophy.

Mr. RABAUT. What are the advantages to which you refer, General, that came to the Government from the purchase in fee simple?

General STURGIS. Well, let us take, for instance, sir, where you had an easement in an area and it became pretty populated, it is a difficult thing to get the people out of there where you have a smaller reservoir and where you have a very big inflow in it which would cause the rise of the reservoir to be rapid. Another matter is the question of the control of drift. In other words, if we own it we could go around it and clean it up and do anything we wanted to in order to keep it in shape, and we would not have that complete control under the easement. Those were some of the factors that caused a change of policy back in 1941 or 1942.

I would like to ask Mr. Beard if we did not start out in the way which I described?

Mr. BEARD. Yes, sir.

Mr. DAVIS. Thank you, General Sturgis, for your very thorough and informational presentation.

FRIDAY, JANUARY 15, 1954.

GENERAL INVESTIGATIONS

WITNESSES

BRIG. GEN. C. H. CHORPENING, ASSISTANT CHIEF OF ENGINEERS FOR CIVIL WORKS
COL. JOHN U. ALLEN, RESIDENT MEMBER, BEACH EROSION BOARD
G. L. BEARD, CHIEF, PLANNING AND DEVELOPMENT DIVISION
B. J. TOFANI, CHIEF, PROGRAM DEVELOPMENT BRANCH
JOSEPH R. BRENNAN, CHIEF, PROJECT DEVELOPMENT BRANCH

Amounts available for obligation

	1953 actual	1954 estimate	1955 estimate
Appropriation or estimate		$2,867,500	$2,800,000
Balance transferred, pursuant to Public Law 153, from—			
"Maintenance and improvement of existing river and harbor works"		318,440	
"Flood control, general"		166,915	
"Niagara redevelopment remedial works investigation, Corps of Engineers"		87,970	
Reimbursements from non-Federal sources		12,500	12,500
Reimbursements from other accounts		12,500	12,500
Obligations incurred		3,465,825	2,825,000
Comparative transfer from—			
"Maintenance and improvement of existing river and harbor works"	$1,524,889		
"Flood control, general"	2,326,167		
"Niagara redevelopment remedial works investigation, Corps of Engineers"	47,987		
Total obligations	3,899,043	3,465,825	2,825,000

NOTE.—Reimbursements from non-Federal sources are received from private individuals, commercial concerns, nonappropriated funds, and States and municipalities (33 U. S. C. 558, 559, 571, 701, and 701k).

Obligations by activities

Description	1953 actual	1954 estimate	1955 estimate
Direct Obligations			
1. Examinations and surveys:			
(a) Navigation studies	$380,053	$425,708	$275,000
(b) Flood control studies	1,177,146	721,235	550,000
(c) Beach erosion cooperative studies	42,340	84,698	25,000
(d) Special studies:			
(1) Arkansas-White and Red River Basin survey	473,000	499,132	470,000
(2) New England-New York survey	658,200	614,669	760,000
(3) San Francisco Bay area survey			50,000
(4) Survey of Great Lakes water levels	140,361	50,339	50,000
(5) Niagara redevelopment remedial works investigation	47,987	87,970	
2. Collection and study of basic data:			
(a) Stream gaging	412,255	311,300	200,000
(b) Precipitation studies	4,519	221,000	200,000
(c) Fish and wildlife studies	42,655	53,294	40,000
(d) Beach erosion development studies	240,611	175,179	80,000
(e) Miscellaneous studies	279,016	196,301	100,000
Total direct obligations	3,899,043	3,440,825	2,800,000
Obligations Payable Out of Reimbursements From Other Accounts			
1. Examinations and surveys:			
(a) Other Federal agencies		6,000	6,000
(b) Non-Federal agencies		6,000	6,000
2. Collection and study of basic data:			
(a) Other Federal agencies		6,500	6,500
(b) Non-Federal agencies		6,500	6,500
Total obligations payable out of reimbursements from other accounts		25,000	25,000
Total obligations	3,899,043	3,465,825	2,825,000

Obligations by objects

Object classification	1953 actual	1954 estimate	1955 estimate
CORPS OF ENGINEERS			
Summary of Personal Services			
Total number of permanent positions		342	261
Full-time equivalent of all other positions		10	4
Average number of all employees		336	258
Average salaries and grades:			
General schedule grades:			
Average salary		$4,694	$4,729
Average grade		GS-6.8	GS-6.8
Ungraded positions: Average salary		$3,112	$3,112
Personal service obligations:			
Permanent positions		$1,473,002	$1,157,057
Other positions		27,000	12,000
Regular pay in excess of 52-week base		5,598	4,443
Payment above basic rates		14,400	17,500
Total personal service obligations		1,520,000	1,191,000
Direct Obligations			
01 Personal services		1,505,000	1,176,000
02 Travel		61,900	45,000
03 Transportation of things		1,500	1,000
04 Communication services		100	100
05 Rents and utility services		4,000	3,500
07 Other contractual services		224,981	126,650
Services performed by other agencies		231,000	100,000
Services performed by "Revolving fund, Corps of Engineers"		1,000,000	1,000,000
08 Supplies and materials		45,000	30,000
13 Refunds, awards, and indemnities		250	250
15 Taxes and assessments		2,500	2,500
Total direct obligations		3,076,231	2,485,000

Obligations by objects—Continued

Object classification	1953 actual	1954 estimate	1955 estimate
CORPS OF ENGINEERS—continued			
Obligations Payable Out of Reimbursements From Other Accounts			
01 Personal services: Civilian		$15,000	$15,000
02 Travel		500	500
04 Communication services		500	500
05 Rents and utility services		500	500
06 Printing and reproduction		1,000	1,000
07 Other contractual services		7,500	7,500
Total obligations payable out of reimbursements from other accounts		25,000	25,000
Total obligations		3,101,231	2,510,000
ALLOCATION TO FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR			
Total number of permanent positions		7	6
Average number of all employees		7	6
Average salaries and grades:			
General schedule grades:			
Average salary		$5,040	$5,394
Average grade		GS–8.5	GS–8.8
01 Personal services:			
Permanent positions		$35,743	$30,086
Regular pay in excess of 52-week base		137	116
Total personal services		35,880	30,202
02 Travel		17,393	9,770
15 Taxes and assessments		21	28
Total obligations		53,294	40,000
ALLOCATION TO GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR			
Total number of permanent positions		47	42
Full-time equivalent of all other positions		9	8
Average number of all employees		51	48
Average salaries and grades:			
General schedule grades:			
Average salary		$4,578	$4,608
Average grade		GS–6.8	GS–6.8
01 Personal services:			
Permanent positions		$204,100	$181,500
Other positions		25,000	20,000
Regular pay in excess of 52-week base		900	700
Total personal services		230,000	202,200
02 Travel		15,000	14,000
03 Transportation of things		900	500
04 Communication services		2,100	1,000
05 Rents and utility services		2,800	1,500
06 Printing and reproduction		1,100	500
07 Other contractual services		20,773	14,000
08 Supplies and materials		26,327	27,900
09 Equipment		11,500	11,000
15 Taxes and assessments		800	400
Total obligations		311,300	273,000

Obligations by objects—Continued

Object classification	1952 actual	1953 estimate	1954 estimate
SUMMARY			
Summary of Personal Services			
Total number of permanent positions		396	309
Full-time equivalent of all other positions		19	12
Average number of all employees		394	312
Average salaries and grades:			
General schedule grades:			
Average salary		$4,694	$4,729
Average grade		GS–6.8	GS–6.8
Ungraded positions: Average salary		$3,112	$3,112
Personal service obligations:			
Permanent positions		1,712,845	1,368,643
Other positions		52,000	32,000
Regular pay in excess of 52-week base		6,635	5,259
Payment above basic rates		14,400	17,500
Total personal service obligations		1,785,880	1,423,402
Direct Obligations			
01 Personal services		1,770,880	1,408,402
02 Travel		94,293	68,770
03 Transportation of things		2,400	1,500
04 Communication services		2,200	1,100
05 Rents and utility services		6,800	5,000
06 Printing and reproduction		1,100	500
07 Other contractual services		245,754	140,650
Services performed by other agencies		231,000	100,000
Services performed by "Revolving fund, Corps of Engineers"		1,000,000	1,000,000
08 Supplies and materials		71,327	59,900
09 Equipment		11,500	11,000
13 Refunds, awards, and indemnities		250	250
15 Taxes and assessments		3,321	2,928
Total direct obligations		3,440,825	2,800,000
Obligations Payable Out of Reimbursements From Other Accounts			
01 Personal services: Civilian		15,000	15,000
02 Travel		500	500
04 Communication services		500	500
05 Rents and utility services		500	500
06 Printing and reproduction		1,000	1,000
07 Other contractual services		7,500	7,500
Total obligations payable out of reimbursements from other accounts		25,000	25,000
Total obligations		3,465,825	2,825,000

Analysis of expenditures

	1953 actual	1954 estimate	1955 estimate
Unliquidated obligations, start of year			$618,146
Obligations incurred during the year		$3,465,825	2,825,000
Obligations transferred, pursuant to Public Law 153, from—			
"Maintenance and improvement of existing river and harbor works"		187,946	
"Flood control, general"		89,375	
		3,743,146	3,443,146
Deduct:			
Reimbursements		25,000	25,000
Unliquidated obligations, end of year		618,146	618,146
Total expenditures		3,100,000	2,800,000
Expenditures are distributed as follows:			
Out of current authorizations		2,800,000	2,500,000
Out of prior authorizations		300,000	300,000

Mr. DAVIS. The subcommittee will resume this morning with a discussion of the details of the request of the Corps of Engineers, following our general discussion of the overall problem with General Sturgis, the Chief of Engineers yesterday.

At this point in the record we will insert page 8 of the justifications, which shows that we have pending before us a request for "General investigations" in the amount of $2,800,000.

(The matter referred to follows:)

Justification of estimate

1. Examinations and surveys:	
(*a*) Navigation studies	$275,000
(*b*) Flood control studies	550,000
(*c*) Beach erosion cooperative studies	25,000
(*d*) Special studies:	
(1) Arkansas-White-Red River Basins survey	470,000
(2) New England-New York survey	760,000
(3) San Francisco Bay, Calif	50,000
(4) Survey of water levels of Great Lakes	50,000
Subtotal, examinations and surveys	2,180,000
2. Collection and study of basic data:	
(*a*) Stream gaging (Geological Survey)	200,000
(*b*) Precipitation studies (Weather Bureau)	200,000
(*c*) Fish and wildlife studies (Fish and Wildlife Service)	40,000
(*d*) Beach erosion development studies	80,000
(*e*) Miscellaneous studies	100,000
Subtotal, collection and study of basic data	620,000
Total, "General investigations"	2,800,000

EXAMINATIONS AND SURVEYS

Mr. DAVIS. Your examinations and surveys request I note, General, is divided into four parts; One on navigation studies for which you have a request for $275,000; secondly, flood-control studies which involves a request of $550,000; beach-erosion cooperative studies, where you have a request for $25,000, and then the fourth group entitled "Special Studies," totaling $1,330,000.

STATUS OF NAVIGATION AND FLOOD CONTROL REPORTS AND DATA ON STATUS OF FUNDS

General, what is the status of your navigation and flood-control reports at the present time?

General CHORPENING. The total number of studies in the current survey program now assigned to field offices is 848, with a total estimated cost of approximately $50 million, of which approximately $28 million have been made available through fiscal year 1954, leaving about $22 million to complete.

If you like, I can give you a breakdown of the whole survey program and its status at this time. Possibly you would rather have that for the record.

Mr. DAVIS. I believe you furnished us with two tables in that respect last year, which appeared on pages 214 and 215 of our hearings, and if you would bring those up to date and give us a similar report

for this year to the one that appeared on page 214 and then bring that table on page 215 up to date, I believe that would serve our purpose.

General CHORPENING. Yes, sir.

(The matters referred to follow:)

Status of favorable reports as of December 1953

Number of reports	Rivers and harbor	Flood control	Beach erosion	Total
With Congress and not yet authorized	71	21	16	108
With Budget Bureau	16	10	1	27
With States and Federal agencies	8	10	2	20
With Board and Office, Chief of Engineers	20	28	0	48
Backlog in field [1]	377	446	21	844
Total	492	515	40	1,047

[1] Includes all reports (except 4 special studies); favorable or unfavorable recommendation not yet determined.

Number of navigation and flood-control-report authorizations ordered and processed by fiscal years [1]

Fiscal year	Ordered	Completed	Fiscal year	Ordered	Completed
1945	465	78	1951	94	61
1946	209	116	1952	111	83
1947	260	126	1953	46	65
1948	182	91	1954	[2] 40	[2] 91
1949	165	148	1955		[2] 73
1950	220	116			

[1] Figures are for report authorizations (Public Works Committee resolutions or items in river-and-harbor or flood-control acts). Number of reports is somewhat less since several authorizations may be included in 1 report. Figures apply to River and Harbor Board.
[2] Estimated.

Summary of data on funds—General investigations, examinations, and surveys

	Unobligated balance as of July 1, 1953	Unliquidated obligations July 1, 1953	Appropriated fiscal year 1954	Total available for obligations in fiscal year 1954	As of Nov. 30, 1953			
					Expenditures in fiscal year 1954	Obligations in fiscal year 1954	Unexpended balance to date	Unobligated balance to date
EXAMINATIONS AND SURVEYS								
Navigation studies	$95,708	$18,635	$330,000	$425,708	$141,769	$131,065	$297,574	$272,643
Flood-control studies	61,235	10,348	660,000	721,235	372,519	372,093	359,064	349,142
Beach erosion cooperatiive studies	59,698	1,790	25,000	84,698	30,277	31,354	56,211	53,344
Special studies:								
New York-New England resources study	15,816	30,365	600,000	615,816	264,845	254,613	381,335	361,203
Arkansas-White-Red Basins study	22,985	21,263	475,000	497,985	185,676	178,242	333,572	319,743
Great Lakes water-levels study	339	772	50,000	50,339	27,445	27,476	23,666	22,863
Niagara redevelopment remedial works study	87,970			87,970	17,204	17,204	70,766	70,766
San Francisco Bay study					5,000	5,000		
Total	343,751	83,173	2,140,000	2,483,751	1,044,735	1,017,047	1,522,189	1,466,704

BACKLOG OF SURVEYS

Mr. DAVIS. You mentioned that you have been able to do some work on them. What can you tell us about the backlog of those that have been requested of you?

General CHORPENING. The situation, as far as backlog on surveys, is about the same as presented to this committee last year.

Actually, we have a few more surveys in the backlog this year than we had last year. It may be of interest to the committee to know that, in fiscal year 1953, 46 additional surveys were directed by the Congress, 15 in the first half of fiscal 1954. During fiscal year 1953, 65 reports were completed by the River and Harbor Board and 49 were sent to the Congress and in the first half of 1954, 29 were sent to the Congress. That indicates that the status is just about the same overall as it was last year.

Obviously, remembering the figures I just stated that the total survey program is estimated to cost $50 million, and of that $22 million is required to complete it as it now stands, and with appropriations running to the level of approximately something less than $1 million a year, it is a longtime proposition to complete our presently authorized survey program.

The committee will recall that yesterday when General Sturgis was here, he stated that we have a study underway which is approaching completion in which we are reviewing our survey program along the lines of the review already made of the authorized projects.

You might well ask, What do we anticipate the impact of that might be on the estimated cost? At this stage we are not in a position to make any statements on that.

Mr. DAVIS. You are just about holding your own then with respect to your backlog of requested reports and so on, at least for the last year and a half or so. You have about cleaned up the same number of directives that you had last year?

General CHORPENING. That is correct, yes, sir. It might vary a little from year to year but, essentially, it is about the same.

Is that correct, Mr. Brennan?

Mr. BRENNAN. Yes, sir, that is correct.

TENTATIVE ALLOCATION OF FUNDS FOR NAVIGATION STUDIES

Mr. DAVIS. You mentioned in connection with your navigation studies that you anticipated that you would be able to work on about 30 of the most important of the navigation studies.

Recognizing that this allocation must be to some extent tentative, would you insert for the record, if you will, some statement as to the tentative allocations you have made of this $275,000?

General CHORPENING. Yes, sir, we shall be glad to do that.

(The matter referred to follows:)

Reports in fiscal year 1955 program, tentative allocation of funds in fiscal year 1955 to navigation studies

Name of report	Total estimated cost	Amount allocated through fiscal year 1954	Proposed allocation for fiscal year 1955	Estimated date of completion, fiscal year—	Cost remaining after 1955
NEW ENGLAND DIVISION					
Boston Harbor, reserve channel, Massachusetts	$13,000	$7,500	5,500	1955	----------
Bridgeport Harbor, Conn	23,000	16,100	6,900	1955	----------
Rockland Harbor, Maine	10,000	2,500	7,500	1955	----------
NORTH ATLANTIC DIVISION					
New York district: New York and New Jersey ship channel	33,000	17,000	16,000	1955	----------
Baltimore district: Baltimore Harbor and Channel, Md	34,100	21,600	12,500	1955	----------
Norfolk district: Norfolk Harbor, South Branch, Elizabeth River, Va	5,000	----------	5,000	1955	----------
SOUTH ATLANTIC DIVISION					
Jacksonville district:					
San Juan Harbor, P. R	22,000	10,000	12,000	1955	----------
Gulf coast shrimp harbors, Florida	36,000	7,200	5,000	1957	$23,800
LOWER MISSISSIPPI VALLEY DIVISION					
New Orleans district:					
Gulf Intracoastal Waterway, Louisiana-Texas section	30,000	20,000	10,000	1956	----------
Bayou LaFourche, La	160,000	112,900	[1] 5,000	[1] 1955	42,100
Streams in southwest Louisiana, west of West Atchafalaya Basin levee	109,000	46,200	[1] 5,000	[1] 1955	57,800
SOUTHWESTERN DIVISION					
Galveston district: Gulf Intracoastal Waterway, Louisiana-Texas section	53,000	30,700	22,300	1956	----------
UPPER MISSISSIPPI VALLEY DIVISION					
St. Paul district: Mississippi River-Knutson Dam interim	25,000	21,000	4,000	1955	----------
OHIO RIVER DIVISION					
Louisville district: mouth of Licking River, Covington, Ky	5,000	----------	[1] 2,500	[1] 1955	2,500
Huntington district: Gallipolis, Ohio	5,000	1,800	3,200	1955	----------
GREAT LAKES DIVISION					
Duluth district:					
Duluth-Superior Harbor, Minn. and Wis	125,700	10,700	23,700	1957	91,300
Saxon Harbor, Wis	7,600	5,900	1,700	1955	----------
Milwaukee district: Fox River, Wis	12,000	7,100	4,900	1955	----------
Buffalo district:					
Irondequoit Bay, N. Y	24,200	21,900	2,300	1955	----------
Cleveland Harbor, Ohio (interim)	19,000	14,000	[1] 5,000	[1] 1956	----------
Detroit district:					
Rouge River, Mich	28,800	3,800	11,000	1956	14,000
Great Lakes connecting channels	116,000	70,000	46,000	1956	----------
SOUTH PACIFIC DIVISION					
Los Angeles district: Coo anchorage, Calif	18,000	----------	10,000	1956	8,000
San Francisco district:					
Hilo Harbor, Hawaii, T. H. (seawall)	23,000	21,000	2,000	1955	----------
Kalaupapa Landing, Molokai, T. H	8,000	2,000	6,000	1956	----------
Noyo Harbor, Calif	21,000	----------	10,000	1956	11,000
NORTH PACIFIC DIVISION					
Portland district: Winchester Bay, Oreg	5,000	----------	5,000	1956	----------
Seattle district:					
Bellingham Harbor, Wash	7,700	----------	7,700	1956	----------
Fisherman Bay, Wash	4,100	3,800	300	1956	----------
Alaska 308 report	325,000	239,900	17,000	1956	68,100
Total	----------	----------	275,000	----------	----------

[1] Interim only.

TENTATIVE ALLOCATION OF FUNDS FOR FLOOD-CONTROL STUDIES

Mr. DAVIS. And we would like to have a similar breakdown, if you can furnish it, with respect to the flood-control studies, or do you have that together?

General CHORPENING. We have that all prepared, sir, I think, and we can turn it over to you today.

I might mention that on flood control our tentative proposal is to allocate the requested funds to 53 reports, and with which funds we expect to complete 23 and continue 29.

Mr. DAVIS. Then, would you also indicate the actual allocations that you have made of your examination and survey funds for navigation and flood control for the 1954 fiscal year?

General CHORPENING. Yes, sir.

(The matters referred to follow:)

Reports in fiscal year 1955 program (tentative allocation of funds in fiscal year 1955 to flood-control studies)

Name of report	Total estimated cost	Amount allocated through fiscal year 1954	Proposed allocation for fiscal year 1955	Estimated date of completion, fiscal year—	Cost remaining after 1955
NEW ENGLAND DIVISION					
None.					
NORTH ATLANTIC DIVISION					
Philadelphia District:					
Delaware River, Pa., N. Y., and N. J. (308 Report)	$20,000	$15,200	$4,800	1955	----------
Delaware River at Yardley, Pa	4,000	700	3,300	1955	----------
Norfolk District: Lynchburg, Va., James River	29,000	16,900	12,100	1956	----------
SOUTH ATLANTIC DIVISION					
Mobile District:					
Montgomery, Ala., Coosa River	16,000	15,000	1,000	1956	----------
Rome, Ga., Coosa River	30,000	2,400	10,000	1956	$17,600
Pearl River, Miss	74,000	9,700	25,000	1957	39,300
LOWER MISSISSIPPI VALLEY DIVISION					
New Orleans District:					
Streams and bayous west of West Atchafalaya Basin protection levee	115,000	49,100	8,000	[1]	57,900
Memphis District: St. Francis River, Ark. and Mo	175,000	87,100	10,000	[1]	77,900
SOUTHWESTERN DIVISION					
Galveston District: Trinity Bay Soil Conservation District, Texas	59,900	33,500	17,400	1956	9,000
Fort Worth District: Chambers and Cedar Creeks	96,700	36,700	10,000	1957	50,000
Albuquerque District: Rio Grande at Socorro, N. Mex	25,000	5,000	10,000	1956	10,000
UPPER MISSISSIPPI VALLEY DIVISION					
St. Louis District:					
Illinois River and tributaries, Illinois	239,000	223,300	15,700	1956	----------
Mississippi River agricultural areas	97,000	93,500	3,500	1955	----------
Missouri River-Crystal City-Festus, Mo.—Interim report	16,000	6,000	10,000	1955	----------
Rock Island District: Rock River, Ill. and Wisc	64,500	40,900	23,600	1956	----------
St. Paul district:					
Minnesota River, main stem communities, interim reservoir report	50,000	17,600	10,000	1956	22,400
Red River, Grafton, N. Dak., interim report	25,000	300	18,500	1956	6,200
Red River, Crookston, Minn., interim report	45,000	26,200	15,500	1956	3,300
Root River, Minn	98,700	69,000	29,700	1956	----------

Reports in fiscal year 1955 program (allocation of funds in fiscal year 1955 to flood-control studies)—Continued

Name of report	Total estimated cost	Amount allocated through fiscal year 1954	Proposed allocation for fiscal year 1955	Estimated date of completion, fiscal year—	Cost remaining after 1955
MISSOURI RIVER DIVISION					
Kansas City district:					
Fishing River near Excelsior Springs, Mo	$26,200	$24,600	$1,600	1955	
Lamine and Blackwater River, Mo	90,000	26,400	10,000	1955	$53,600
Omaha district:					
Platte River, Nebr	264,500	132,000	20,000	(1)	112,500
James River, N. and S. Dak	60,000	21,200	8,000	1956	30,800
Garrison district: Cannonball River, N. Dak	50,000	43,200	6,800	1955	
Fort Peck district: Sun River, Mont	50,000	13,600	15,000	1956	21,400
OHIO RIVER DIVISION					
Nashville district: Big South Fork, Cumberland River, Tenn. and Ky	30,000	5,700	3,000	1956	21,300
Louisville, Ky. district:					
Kentucky River and tributaries, Ky	200,000		10,000	1955	190,000
Wabash River above White River, Ind	364,000	48,800	25,000	(1)	290,200
Huntington district:					
Brush Creek, Princeton, W. Va	31,000	28,000	3,000	1955	
Leatherwood Creek, Cambridge, Ohio	56,900	51,900	5,000	1955	
Meadow River, East Rainelle, W. Va	25,700	23,200	2,500	1955	
Pittsburgh district:					
French Creek, Pa	11,000	5,700	5,300	1955	
Chartiers Creek, Washington, Pa	40,000	9,300	10,000	1956	20,700
GREAT LAKES DIVISION					
Milwaukee district: Grand River, Mich., Lansing, Mich.:					
Interim report	52,500	47,500	5,000	1955	
Final report	184,900	15,700		(1)	169,200
Kalamazoo River at Kalamazoo, Mich	70,000	65,000	5,000	1956	
Kalamazoo River at Battle Creek, Mich	50,000	45,000	5,000	1955	
Chicago district:					
Illinois River and tributaries, Illinois	718,400	695,400	23,000	1956	
Illinois River, Lockport, Ill	12,000	10,700	1,300	1955	
Detroit district: Maumee River, Ind. and Ohio	187,200	150,700	20,000	1956	16,500
SOUTH PACIFIC DIVISION					
Los Angeles district:					
Colorado River above Lee Ferry, Ariz	127,100	45,200	5,000	(1)	76,900
Mojave River, Calif	128,200	101,600	10,000	1956	16,600
San Francisco district:					
Alameda Creek, Calif	101,600	34,600	10,000	1957	57,000
Guadalupe River and adjacent streams, California	86,000	28,100	4,000	(1)	53,900
Waimea River, Kauai, T. H. (revision)	17,000	16,000	1,000	1955	
Sacramento district:					
Jordan River, Utah, interim report	75,000	12,900	[2] 15,000	[2] 1955	47,100
Sacramento-San Joaquin Delta, Calif	119,800	74,300	7,000	1956	38,500
NORTH PACIFIC DIVISION					
Portland district: Silvies River and tributaries, Oregon	89,300	52,800	10,000	1956	26,500
Seattle district: Okanogan River, Wash	27,500	17,500	10,000	1956	
Walla Walla district:					
Portneuf River and Marsh Creek, Idaho	63,000	52,600	10,400	1955	
Grand Ronde River, Oreg	120,000	84,900	10,000	1956	25,100
Heise-Roberts area, Idaho	63,900	48,900	15,000	1956	
Alaska district: Alaska 308 report	775,000	619,500	20,000	1957	135,500
Total			550,000		

[1] After fiscal year 1957. [2] Interim only.

Allocation of fiscal year 1954 funds for navigation studies

Name of report	Estimated cost	Amount allocated through fiscal year 1953	Allocation, fiscal year 1954 funds	Estimated cost to complete after fiscal year 1954
Cape Cod Canal, Mass	$36,100	$21,100	$15,000	
Boston Harbor, Mass., Reserve Channel	13,500	4,000	3,500	$6,000
Bridgeport Harbor, Conn	23,000	6,100	10,000	6,900
Rockland Harbor, Maine	10,000		[1] 2,500	[2] 7,500
New York Harbor, N. Y., Arthur Kill	33,000	5,000	12,000	16,000
New York Harbor, South Channel	13,700	12,700	1,000	
Great Egg Harbor, N. J., Inlet at Ocean City	4,900	900	4,000	
Baltimore Harbor, Md	34,100	8,600	13,000	12,500
Intracoastal Waterway:				
Gulf section, Louisiana	30,000	10,000	10,000	10,000
Gulf section, Texas	53,000	9,800	20,900	22,300
Trinity River, Liberty, Tex	15,000	12,400	2,600	
Charleston Harbor, S. C.: Northeast of Drum Island	4,800	2,800	2,000	
Morehead City, N. C	11,500	10,000	1,500	
Palm Beach, Fla., Lake Worth Inlet	6,600		[1] 6,600	
San Juan Harbor, P. R	22,000	4,000	[1] 6,000	12,000
Southern Louisiana Streams and Bayous	269,000	128,600	30,500	109,900
Port Aransas-Corpus Christi Waterway, Tex	29,000	6,000	23,000	
Pass Cavallo-Port Lavaca, Tex	4,700	3,200	1,500	
Cornucopia Harbor, Wis	6,500	5,000	1,500	
Two Rivers Harbor, Wis	7,600	2,600	5,000	
Toledo Harbor, Ohio	12,100	3,100	9,000	
Great Lakes connecting channels	116,000		70,000	46,000
Ashtabula Harbor, Ohio	15,000		15,000	
Yaquina Bay, Oreg	10,400	5,900	4,500	
Siuslaw River and Harbor, Oreg	6,500		6,500	
Alaska rivers and harbors	325,000	200,900	39,000	85,100
Grays Harbor, Westhaven, Wash	4,000		4,000	
Tacoma Harbor (Wapato Waterway, Wash	7,000	100	6,900	
Willapa River and Harbor and Naselle River, Wash	8,500	8,000	500	
Lake Washington ship canal	37,400	34,900	2,500	
Total, navigation studies	1,169,900	505,700	330,000	334,200

[1] Preliminary examination.
[2] Survey.

Allocation of fiscal year 1954 funds for flood control studies

Name of report	Estimated cost	Amount allocated through fiscal year 1953	Allocation, fiscal year 1954 funds	Estimated cost to complete after fiscal year 1954
Miami River, Fla., locks and dams	$7,600	$4,600	$3,000	
Coosa River, Rome, Ga	30,000	900	1,500	$27,600
Tombigbee River, Miss. and Ala	294,500	150,000	11,500	133,000
Warrior River, Ala	126,000	118,000	8,000	
Southern Louisiana Streams and Bayous	230,000	141,000	9,500	79,500
Amite and Tangipahoa Rivers, La	17,000		17,000	
Wolf River, Tenn. and Miss	32,300	17,300	15,000	
Trinity Bay Soil Conservation District, Texas	59,900	18,500	15,000	26,400
Port Arthur-Sabine Lake, Texas	7,400	6,400	1,000	
Richland, Chambers and Cedar Creeks, Tex	156,700	131,700	25,000	
Texas City Seawall, Texas	30,500	28,500	2,000	
Rio Grande, N. Mex	25,000		5,000	20,000
Kaskaskia River, Ill	322,000	313,000	9,000	
Mississippi River above mouth of Ohio River:				
St. Louis, Mo	258,000	233,000	25,000	
St. Paul and South St. Paul, Minn	50,000	10,000	40,000	
Crystal and Festus Cities, Mo	16,000		6,000	10,000
Winona, Minn	33,000	32,000	1,000	
Rock River, Ill. and Wis	64,500	27,900	13,000	23,600
Des Moines River, Iowa	235,000	149,600	3,500	81,900
Roseau River, Minn	125,000	108,000	17,000	
Minnesota River, Minn.:				
Mankato-North Mankato	40,000	32,200	7,800	
Interim reservoir study	50,000	2,600	15,000	32,400
Red River of the North, interim, Crookston, Minn	41,500	21,500	4,700	15,300
Lost River and Ruffy Brook, Minn	44,000	40,000	4,000	
Kansas River, Kans	20,000		20,000	
Little Nemaha River, Nebr. and Kans	96,000	86,000	10,000	
Lamine and Blackwater Rivers, Mo	51,000	17,400	9,000	24,600
Floyd River, Iowa	82,700	47,700	35,000	

Allocation of fiscal year 1954 funds for flood control studies—Continued

Name of report	Estimated cost	Amount allocated through fiscal year 1953	Allocation, fiscal year 1954 funds	Estimated cost to complete after fiscal year 1954
Platte River, Nebr.	$264,500	$124,500	$7,500	$132,500
Cannonball River, N. Dak.	50,000	33,200	10,000	6,800
Sun River, Mont.	25,000	3,600	10,000	11,400
Wabash River above White River, Ind.	364,000	25,800	23,000	315,200
Mahoning-Grand River Basins, Ohio	52,300	47,300	5,000	
West Fork River, W. Va.	79,400	65,400	14,000	
Grand River, Mich.	184,900	11,700	4,000	169,200
Grand River at Lansing (interim)	52,500	47,500		5,000
Saginaw River, Mich.	237,300	232,300	5,000	
Maumee River, Ind. and Ohio	187,200	126,700	24,000	36,500
Mojave River, Calif.	128,200	83,600	18,000	26,600
Sacramento-San Joaquin River Delta, Calif.	119,800	61,300	13,000	45,500
Chico Landing-Red Bluff, Calif.	31,200	30,200	1,000	
Eel River, Calif. (interim)	5,000	0	5,000	
Alameda Creek, Calif.	101,600	19,600	15,000	67,000
Tualatin River, Oreg.	208,200	199,700	8,500	
Lower Columbia River, Wash. and Oreg.	351,800	314,800	7,000	30,000
Okanogan River, Wash.	27,500	15,100	2,400	10,000
Middle Snake River, Oreg. and Wash.	145,900		145,900	
Umatilla River, Oreg.	163,400	160,300	3,100	
Skagit River and tributaries, Washington	231,200	230,200	1,000	
Snohomish River and tributaries, Washington	57,100	56,500	600	
Yakima River and tributaries, Washington	252,000	251,000	1,000	
Alaska "308" Report	775,000	617,000	2,500	155,500
Total, flood control	6,640,600	4,495,100	660,000	1,485,500

Allocation of fiscal year 1954 funds for special studies and beach erosion studies

SPECIAL STUDIES

Name of report	Estimated cost	Amount allocated through fiscal year 1953	Allocation, fiscal year 1954 funds	Estimated cost to complete after fiscal year 1954
NENYIAC	$2,877,000	$1,517,000	$600,000	$760,000
AWR	2,875,000	1,930,000	475,000	470,000
Great Lakes levels	1,016,000	200,000	50,000	766,000
Subtotal, special studies			1,125,000	

BEACH EROSION STUDIES

Name of report	Allocation, fiscal year 1954 funds
General development	$100,000
Cooperative	25,000
Subtotal, beach erosion studies	125,000

BEACH EROSION COOPERATIVE STUDIES

Study	Federal share of cost, fiscal year 1954 funds
Grand Isle, La.	$4,600
Appendix IV, State of California (San Diego County)	15,000
Manitowoc-Two Rivers, Wis.	5,400
Total	25,000

General CHORPENING. On flood control the allocation was $660,000 to 51 reports and on navigation $330,000, which permitted progress on 30 reports.

METHOD OF SELECTING PROJECT STUDIES

Mr. DAVIS. What ground rules have you used to allocate your navigation and flood-control survey funds for the 1955 fiscal year?

General CHORPENING. We selected those studies in which, in our opinion, an urgent navigation or a flood-control problem exists. Also, we have tried to apply funds to studies that are pretty well along to get them cleaned up, rather than to spread funds and do only a little work on more reports.

I would like to ask Mr. Brennan if he wishes to add anything to that statement.

Mr. BRENNAN. That is correct, sir; and that is in line with the directive that the Bureau of the Budget set out in connection with our survey program last year, covering a relatively few reports of high priority.

PRELIMINARY EXAMINATIONS

Mr. DAVIS. For the record, General, would you distinguish among what you refer to as a preliminary examination and then a survey and then planning?

General CHORPENING. Yes, sir. A preliminary examination is only one that can be directed, legislatively, by the Congress. Is that right, Mr. Brennan?

Mr. BRENNAN. Yes, sir; either by a committee resolution or by an act of Congress.

General CHORPENING. A preliminary examination is an examination that is very limited in scope, sufficient study being made in the field to determine only whether or not a favorable project might result after a full-scale survey. After a preliminary examination is made in the field, it is referred to the Board of Engineers for Rivers and Harbors which reviews the recommendation of the field officers to determine whether or not a full survey is in order. If the Board concludes that the full survey is desirable, then it is checked with the House Committee on Public Works. I think we check that with the committee now, do we not, before directing it to be done?

Mr. BRENNAN. Yes, sir, if the Public Works Committee of the House has requested such action, as it has done in many cases recently before a survey is ordered.

General CHORPENING. Authority is available for the Chief of Engineers to direct that a survey be made, but in recent years, when required, we have checked it back with the House Public Works Committee before we go ahead with a full survey.

The survey then would be assigned to the district engineer in whose territory this particular problem lies, and he would proceed to make the survey. I think the committee knows that the survey then includes a thorough study of the economics, the benefits, and the estimated cost of improvements. The survey comes back through the Chief's office and goes to the River and Harbor Board for consideration. After the Board and Chief act, whatever the findings are, it is transmitted through the Secretary of the Army to the Bureau of the Budget and from there to the Congress, with the recommendation

of the Board and of the Chief of Engineers, the Secretary of the Army, and the Bureau of the Budget.

Mr. DAVIS. You referred to a directive with respect to these surveys. A directive by whom?

General CHORPENING. The directive, basically, from the Congress—from the Public Works Committees or, in the case of an original preliminary examination or survey, in an omnibus bill.

When there has once been a report made on a particular stream or problem, resolutions from either the Senate or the House Public Works Committee can request a review of the report. That does not require legislative action. In many of these outstanding surveys which we list here in the 844 figure are requests for review of earlier reports.

Mr. DAVIS. When was the last date that Congress passed an omnibus measure that gave you a new group of preliminary examinations to start on?

General CHORPENING. The last omnibus bill was passed in May 1950.

Mr. DAVIS. Since then you have had only directives to review prior preliminary examinations, is that right?

General CHORPENING. I do not know. Have we had any special bills that call on us for reports since that time?

Mr. BRENNAN. Just one, sir. Except for that, all of our report authorizations since then have been coming from the Public Works Committees of the House and Senate.

Mr. BEARD. To further clarify Mr. Davis' statement, resolutions which we have received in the last 4 years have been to review not only preliminary examinations, Mr. Chairman, but also to review surveys.

Mr. DAVIS. There need be no concurrence between the Public Works Committees of the House and the Senate in that regard?

General CHORPENING. That is correct. Either committee may call on the River and Harbor Board to review reports. For the past several years, the House committee has requested us to comment prior to the time the resolution is actually issued by the committee. Frequently, some of my officers or assistants are called up to testify informally, or sometimes formally, before the Public Works Committee on a pending resolution that is in the House.

Mr. DAVIS. When was the last time you had a resolution coming from the House Committee on Public Works?

Mr. BRENNAN. They come at irregular intervals and I believe, sir, there have been some within the last month or so.

General CHORPENING. Those have come to us asking for comments or actually resolutions which had passed?

Mr. BRENNAN. Both for comments and as final actions.

Mr. DAVIS. There has been at least one directive in the form of a resolution from the House Public Works Committee this year? Can you place something in the record on that?

Mr. BRENNAN. I believe so, sir. I would like to check that figure.

(The matter referred to follows:)

The last resolution passed by the Senate Public Works Committee was on January 8, 1954. The last action by the House Public Works Committee was on January 12, 1954, requesting a preliminary report in connection with a proposed resolution. No resolutions have actually been passed by the House

Public Works Committee since January 1, 1954, but it is understood that one proposed resolution will be taken up by the committee in executive session during the week of January 18, 1954.

Mr. DAVIS. To the best of your recollection, how many such resolutions did you get from the House committee in the last session—the first session of the 83d Congress?

Mr. BRENNAN. In fiscal year 1953, sir, there were 46 resolutions ordered, including both the House and the Senate.

Mr. DAVIS. Do you have a breakdown between the two Houses?

Mr. BRENNAN. I have a breakdown of 1954. In the first half of fiscal year 1954 there were 15 resolutions ordered and 9 of those were from the House and 6 were from the Senate.

General CHORPENING. If desired, we may not have it immediately available, but we can give you a similar breakdown on the 46 during fiscal year 1953.

Mr. DAVIS. I do not think that will be necessary.

I think the information that we have now indicates somewhat of a policy of the committee in that regard.

I do not want to unreasonably detain you on this particular point but just so that we may have it again refreshed in our memory, briefly take a project from a proposal to the appropriation of construction funds.

General CHORPENING. Perhaps, an area has had a severe flood which caused damage in a locality—considerable damage—and the people feel that some protection is needed. Those people would probably get in touch with their Representative in Congress and ask him to do something about it. He would probably come to us or, possibly, to our district office and say, "How do we get something done about this?" and we would tell him it is necessary in order for us to make a study of the problem to secure legislative action in an omnibus bill, if there has been no previous survey. If there has been a previous survey, a resolution should be secured to review the previous report, looking toward this particular problem. We will assume that that is done and we either get it in the omnibus bill or get a resolution to the River and Harbor Board asking for this survey.

That is routed to the Chief of Engineers, who in turn sends it out to the division engineer and to the district in which this particular problem area lies, ordering that the report be made. We determine an estimated cost for the survey and funds are allotted at such time as they are available under appropriation limitations or criteria. Then, we will assume that we have gotten over that hurdle and we have finished the survey and the survey is forwarded back through the division to the Office of the Chief of Engineers. At that time a public notice would be issued by the division engineer, after approval by our Office, usually 30 days prior to the time it is going to be considered by the Board. All concerned are advised so that they may appear, should they desire to do so. I might say that in conducting the survey we, of course, work closely with the local interests and public hearings are held to ascertain the desires of the people, those for and those against the improvement. We make every effort to work closely with the people in carrying out these studies. The report, then, is sent by the Chief of Engineers to the Rivers and Harbors Board. I believe this committee is familiar with the Board and I do not have to go into details on that.

The Board then considers the report and we will assume that the Board's action is favorable and the report is then returned to the Chief of Engineers. At that time the Chief of Engineers prepares his views on the report and sends the report, with his proposed recommendations to other interested agencies of the Government, possibly Interior and possibly Agriculture, depending upon the kind of a problem it is, and to the governors of the affected States—governor or governors. Ninety days is normally allowed them for comments. When those comments are received, the report, with all comments, is forwarded to the Secretary of the Army and to the Bureau of the Budget with the Chief of Engineers' recommendation. The Bureau of the Budget then considers the report and sends it back to us with their comments. We then send it to the Congress.

We are assuming that this is a favorable report all the way through, and the report then is in the hands of the Public Works Committees of the House and of the Senate and is available to be considered there in an omnibus bill at such time as the Congress concludes that an omnibus bill will be introduced.

Hearings are normally held in the Public Works Committees where these reports are considered and, a project having been considered in hearings, may be included in the omnibus bill for authorization by Congress. It then goes into the backlog that we discussed here quite thoroughly yesterday.

Again considering the budgetary limitations and criteria, that project at some time will come up first for planning funds and funds to complete or to make our definite project studies, which go more deeply into the details of the design and economics and which lead to a more refined cost estimate.

The next step would be to request construction funds, based on those definite project studies which have been carried out with the planning funds secured earlier.

Mr. DAVIS. These more refined cost studies then result in what you generally refer to before this committee as the definite project report, is that correct?

General CHORPENING. That is correct. All those studies go together to make that report.

Mr. DAVIS. You would not make that kind of a refined study, as you put it, then until after the Congress has authorized the construction of the project?

General CHORPENING. That is correct.

Mr. DAVIS. In accordance with the understanding that you have had with this committee the preparation of such a report would precede your request for construction funds?

General CHORPENING. That is correct. We would go sufficiently far with our definite project studies to have determined in our mind whether or not we would testify that we have settled the basic engineering problems; that we have sufficient data; that we have some design work done and have a cost estimate which we feel is reliable and that if construction funds were appropriated, we could utilize them in the fiscal year for which we are testifying for funds.

Mr. HAND. Am I to understand clearly, General, that no preliminary examination can be made under any circumstances by resolution of the Public Works Committee, or otherwise, unless it has first been

included in an omnibus or other type of bill passed by the Congress? Is that correct?

General CHORPENING. That is right.

Mr. BRENNAN. There is more to it than that. No original report, either preliminary or survey, can be made unless it is authorized by an act of Congress.

Mr. HAND. Well, I was taking the first step. What I am trying to get at is that the Public Works Committee of either body of the Congress cannot, by resolution, in the absence of preliminary legislation passed by the Congress itself, by resolution, direct the first step, which is a preliminary examination? That is clear, is it?

Mr. BRENNAN. That is correct, sir.

Mr. HAND. Did you want to add something to that, General?

General CHORPENING. Yes, sir; I would like to. We are talking about reports here and I want to be sure that we are not misleading the committee. I want to check on the process in regard to beach-erosion reports.

Colonel ALLEN. Those remarks are not applicable to cooperative studies.

General CHORPENING. These remarks which we are making do not apply to beach-erosion studies.

Mr. HAND. Of course, you have one other difference and that is that naturally in beach-erosion studies, they go to the Beach Erosion Board instead of the Rivers and Harbors Board?

General CHORPENING. Yes, sir; that is right.

SURVEYS

Mr. HAND. You talked about studying your surveys in addition to studying your projects. When you studied your projects, it was with the idea of putting them in three categories: (1) Active projects; (2) deferred for further study projects; and (3) inactive projects, which I have assumed from yesterday's testimony was practically an intimation to the committee to deauthorize if they wanted to.

General CHORPENING. Yes.

Mr. HAND. Do you plan to put the surveys also in categories?

General CHORPENING. In the same three categories, yes, sir, those that we feel in fact, as we see it, have merit and should proceed; those on the other hand that do not have any merit and should be dropped, cleaned off the books; and then those in the intermediate zone which we are not sure about and we think ought to be reconsidered for classification.

Mr. HAND. I take it from your previous testimony that there have been no new studies, no new preliminary examinations or studies initiated since the last omnibus bill of May 1950?

General CHORPENING. Only one has been directed, and that one has not been initiated.

Mr. HAND. And none have been made?

General CHORPENING. None have been made. When we have to define the term "initiated," we may have initiated some studies directed by the 1950 omnibus bill or earlier.

Mr. HAND. But none since May 1950 actually have been initiated?
General CHORPENING. That is correct.

PRIORITY OF PROJECTS

Mr. RILEY. You list these projects in the order of their priority as you see it?
General CHORPENING. No, sir. We will give this committee those that at this time we believe should proceed with the funds we are requesting, but without a priority as between that group. It would be very difficult to establish such a priority.
Mr. RILEY. I can well realize that, but I am just wondering how you arrive at a decision to take up one project and not another.
General CHORPENING. Those are difficult decisions to make, sir.
Mr. RILEY. But it seems to me you should have some order of priority. You have certain criteria that you go by and the ones that score the highest average under those criteria, it would seem to me, would have the greatest priority, then if you do not have enough money for that you would drop down to one that does fit into the money picture.
General CHORPENING. That is correct, sir. Each year we do have criteria that we are following, but in applying them, with such a backlog of studies on the books to apply them to, it is quite difficult to really select those that we think we ought to proceed on. We try to select those to go ahead with where the problem is of greater national impact or where it looks like the studies will come up with a good project.
(Discussion off the record.)
Mr. RILEY. I was very much interested yesterday when General Sturgis told us that you had put these projects into three categories and would probably ask that some of them be removed from the list on legislation. I think that is a very wise determination and I am very happy to see that you are going ahead with that. That does bring back, to some extent, the priority that I am talking about. That is all.

BEACH EROSION STUDIES

Mr. HAND. I note that the entire appropriation suggested for cooperative beach erosion studies is $25,000. Let me ask you, General Chorpening or Colonel Allen, what is the status of requested beach erosion reports on applications before you made by the local municipalities seeking your 50-percent contribution to beach erosion studies?
General CHORPENING. I think I can make a general statement on that and Colonel Allen can fill in. The total number of beach erosion studies outstanding is 21.
Mr. HAND. In process?
General CHORPENING. Now outstanding in the field and anticipated.
Mr. HAND. Actually being prosecuted? I mean the studies.
General CHORPENING. Not all of those are being prosecuted. This is the number that are in our hands or expected.

Mr. HAND. Where formal applications have been made by the local municipality?

General CHORPENING. That is right. They have been made or expected in fiscal year 1955. The total estimated cost of those studies is $273,600, of which $131,600 have been made available through fiscal year 1954, leaving a balance of $142,000 to complete.

Mr. HAND. That $131,600 figure is still available?

General CHORPENING. No. That has been made available and that has been or will be expended by the end of this fiscal year. We estimate that applications for additional studies will be made in fiscal years 1956 and 1957 totaling $186,250, which would indicate a total cost of about $460,000 for present and projected studies, and the amount of about $328,000 will be needed to complete those.

The allowance of $25,000 for fiscal year 1955 will permit work to be carried on on only a few reports of the 21 now in our hands, or expected.

Mr. HAND. You do not have any substantial unspent or unobligated balance with which you can prosecute those reports?

General CHORPENING. No sir.

Mr. HAND. So that any funds which you have plus this anticipated appropriation will only permit you to prosecute a comparatively few cooperative beach erosion studies?

General CHORPENING. That is correct.

Colonel ALLEN. The $25,000 for 1955 will permit us to work on 3 studies, 1 completely and 2 partially. The Chief of Engineers operates on a first-come-first-served basis. As soon as the municipality indicates they have funds on hand to contribute their 50 percent of the cost, the study is approved by the Chief of Engineers.

Mr. HAND. How many are now being prosecuted?

Colonel ALLEN. Fourteen are now in active work and an estimated seven in the process of being applied for. We have had preliminary meetings with the agencies.

Mr. HAND. Those 14, I take it, you have some funds available for, the funds that have been accumulated which are applied to all or a part of those 14.

Colonel ALLEN. Yes, sir. The difference between the 14 and the 21 are the 7 not being worked on because of lack of funds, and applications not yet formally made.

Mr. HAND. Of your present backlog of 14, only 1 is denied any prosecution during the present fiscal year?

Colonel ALLEN. Yes.

Mr. HAND. And in addition to that one there are how many in an informal stage?

Colonel ALLEN. We anticipate seven additional during 1955.

Mr. HAND. And of the 1 now pending and the 7 additional that you anticipate, the present fund will allow you only to go ahead with 3, is that correct?

Colonel ALLEN. That is correct.

Mr. HAND. Can you furnish me with a table showing the location of those projects?

Colonel ALLEN. Yes, sir.

(The matter referred to follows:)

Status of approved and prospective beach erosion cooperative studies

	Estimated Federal costs
Reports in progress, funds allotted:	
State of Connecticut:	
Area 8 and 11 (Saugatuck River to Byram River)	$11,925
Area 9 (East River to New Haven Harbor)	7,175
Area 10 (Thames River to Niantic Bay)	5,350
Sandy Hook to Barnegat Inlet, N. J	29,350
Carolina Beach, N. C	2,050
Alabama Point, Ala	2,500
Kenosha, Wis	4,000
Lake Ontario State Parks, N. Y	16,000
State of California:	
Application III	17,000
Application IV	15,000
Waimea and Hanapepe, T. H	9,355
Grand Isle, La	6,500
Manitowoc—Two Rivers, Wis	5,400
Total	131,605
Approved application (funds not available) Pemberton Point to Gurnet Point, Mass	5,000
Prospective application for cooperative studies, fiscal year 1955:	
State of New Jersey, Barnegat Inlet to Cape May	40,000
State of California:	
San Diego County (phase 2)	15,000
Orange County	15,000
Fire Island to Jones Inlet, N. Y	10,000
Saco River to Pine Point, Maine	7,000
Suffolk County, N. Y	25,000
State of Delaware	25,000
Total	137,000

REPORTS TO CONGRESS

Mr. HAND. Do you have any information, Colonel, as to the number of reports that have already been made favorably to the Congress and the number you anticipate will be presented this year?

Colonel ALLEN. Yes, sir. Since the enactment of Public Law 727, which allowed Federal participation in beach erosion projects in 1946, the Board has reported out 45 cooperative studies of which 25 were favorable to Federal aid and the remainder of 20 were unfavorable to Federal aid. There are 16 projects which have been transmitted to Congress since the last omnibus bill which are in the favorable category.

Mr. HAND. They are awaiting the tender mercies of the committee?

Colonel ALLEN. Yes, sir.

Mr. HAND. In the table you are going to furnish, will you also give the proposed allocation of funds to the various projects?

Colonel ALLEN. Yes, sir.

Mr. HAND. I take it this $25,000 item is limited entirely to the cooperative beach erosion studies?

General CHORPENING. That is correct.

Mr. HAND. There are other funds provided for the general beach erosion studies undertaken solely at the expense of the Federal Government?

General CHORPENING. Yes, sir.

Mr. HAND. I take it that is $80,000?

General CHORPENING. Yes, sir.

Mr. HAND. Those general studies are usually studies of a comparatively large region and not of a given municipality?

General CHORPENING. They are broad studies essential to the whole broad subject of beach erosion and would have application countrywide.

Mr. HAND. But those broad studies are pinpointed to a region, is that not so? Am I not correctly informed when I say there is a general study of the entire coastline of New Jersey underway?

Colonel ALLEN. Yes. We initiated a year ago a regional study program, which we chose to call it, which, when completed, will cover the entire coastline of the United States. We selected New Jersey as the first one because we felt we had a more aggravated problem there, and because we already had some data on it.

Mr. HAND. Data of your own and that had been accumulated over the years by State agencies?

Colonel ALLEN. Yes. That study is now in draft form and the Board will look at it in February and give their comments on its general acceptability and, funds permitting, we will proceed with additional studies in 1955.

Mr. HAND. Do you have funds on hand or reasonably anticipated with which to complete the study of the coastline of New Jersey?

Colonel ALLEN. Yes, sir; the regional study.

Mr. HAND. In your coastline studies you will include a study of the coastline of the Great Lakes?

Colonel ALLEN. Yes, and of the Gulf of Mexico.

Mr. HAND. Do you feel you have reached a point, from an engineering standpoint, where you can say with reasonable certainty what work is necessary for beach erosion?

Colonel ALLEN. That has been one of the primary requirements for our development money. That is, when the Board started operating back in 1930 on a cooperative study basis, it was recognized early there were great gaps in our knowledge as to why beaches eroded, and the Board was authorized in 1945 to begin to fill in these gaps so that it was not a trial and error method as it had been in the past. The philosophy in beach erosion has undergone somewhat of a change in past years. Whereas formerly it was generally accepted that a series of jetties and seawalls was the only solution, we now feel that in many instances periodic nourishment will do the work better and more economically.

Mr. HAND. By periodic nourishment you are referring to the pumping of sand on the beach?

Colonel ALLEN. Yes; restoring it and by periodic pumping permitting the sand to continue in motion.

Mr. BRENNAN. Colonel Allen might want to suggest that there is also proposed in fiscal year 1955 a cooperative study on the coast of New Jersey from Barnegat Inlet to Cape May.

Mr. HAND. With funds put up by the State of New Jersey as a whole?

Mr. BRENNAN. Yes, sir.

Colonel ALLEN. On that study we hope to have our first meeting with State officials late in January.

Mr. HAND. In the table which you will be good enough to furnish me, will you also tell me what projects have had construction money spent on them and by what laws they were authorized?

Colonel ALLEN. There was only one under Public Law 727, and that was Harrison County, Miss. There were 5 authorized but for only 1 have funds been appropriated.

Mr. HAND. And that was in Harrison County, Miss.?

Colonel ALLEN. Yes, sir.

Mr. HAND. Your statement is that the only funds so far spent on any of the five authorized was in Harrison County, Miss.?

Colonel ALLEN. Construction funds.

Mr. HAND. Construction funds. Will you check that carefully, because I have a strong impression that some funds were spent in New York.

Mr. BRENNAN. There have been beach-erosion features authorized under navigation. It may be one of those projects that you are thinking of.

Mr. HAND. It was Winthrop Beach, Mass., the clerk reminds me. Have any funds been spent there?

Colonel ALLEN. Not federally. We recently reviewed their plans and the local agencies are proceeding with it this winter.

Mr. HAND. That is a State and Federal project?

Colonel ALLEN. It qualifies for participation.

Mr. HAND. By reason of its authorization?

Colonel ALLEN. Yes, sir.

Mr. HAND. But Federal funds have not been appropriated?

Colonel ALLEN. No, sir.

Mr. HAND. Thank you very much.

REDONDO BEACH AND SEAL BEACH

Mr. DAVIS. Before we leave this subject of beach erosion studies during September we had the opportunity to see the problem at Redondo Beach, and quite a few newspaper clippings have been sent to my office with respect to the problem at Seal Beach. What can you tell us about the status of those two projects?

Colonel ALLEN. The Seal Beach-Surfside project was constructed, I believe, about 1948, probably 5 years ago, entirely at Federal expense. It was a specially authorized project because of the Navy's interest in the project. It was pointed out at that time that if no nourishment program was undertaken within 5 years the situation would have practically restored itself to the serious condition it was in in 1948, and that is what has occurred. The entire nourishment has been cut off by reason of one structure or another. The only way to provide a protective beach in front of that area is to artificially fill it, and there is no way now by which the Federal Government can go in and assist the local agencies in correcting their problem.

Mr. HAND. When you artificially fill an area, you always anticipate a substantial loss of that placed sand, but even so it is sometimes the only method that can be employed.

Colonel ALLEN. It is lost there, but goes down the beach and goes to fill the area unnourished at the beginning.

Mr. HAND. Hence the reason to study it fully so that you can see whether, if X beach is not benefited, Y beach will be benefited?

Colonel ALLEN. That has been the problem.

Mr. HAND. How much funds would you estimate you would need in order to prosecute the 1 pending problem that is not being prosecuted for lack of funds, plus the 7 new ones?

Colonel ALLEN. You are speaking of cooperative studies?

Mr. HAND. Yes; on all matters pending or anticipated to be pending.

Colonel ALLEN. We would need about $100,000 in 1955 to take care of applications received and expected.

Mr. HAND. That was the appropriation granted last year?

Mr. BRENNAN. No, sir; that was $125,000, but it included both cooperative and general development.

General CHORPENING. $25,000 of that amount was allocated to beach erosion studies and $100,000 for development studies.

Mr. BRENNAN. With further reference to Seal Beach, there is a report initiated under a river and harbor act that includes the navigation aspect as well as beach erosion, but the project recommended favorably by the Corps of Engineers is the improvement of the beach, fundamentally by nourishment. The report is now in the Bureau of the Budget and presumably will be available to Congress for its consideration in the near future.

Mr. DAVIS. In your discussion of it, Colonel Allen, you mentioned that the Federal Government had previously taken a number of steps to correct the difficulties, and then left it in the hands of the local interests and they did not carry through on their responsibilities; is that the gist of your remarks?

Colonel ALLEN. Not entirely. It was pointed out that in order to sustain the beach a nourishment program would have to be initiated, and since the Federal Government had no legal authority to maintain the beach once it was restored, that responsibility must devolve on the local agencies.

Mr. DAVIS. Have conditions developed that were not anticipated at the time that you put the beach in shape in 1948, or has there been a failure to meet responsibility at the local level?

Colonel ALLEN. Nothing was done but emergency measures on the part of the local people.

Mr. DAVIS. And in your opinion what should they have done in order to protect the beach?

Colonel ALLEN. The normal thing would be for the local agency, be it State or local or a combination of the two, to initiate a periodic nourishment program of the beach. This condition at Surfside and Seal Beach will continue to work down the coast of California from where it is now, because the sand is moving to the south in that area.

General CHORPENING. Is it not true that the work done in 1948 was not done under regular beach-erosion procedure, but was done entirely by the Federal Government and it was done in connection with naval operations?

General CHORPENING. We have completed a report under a rivers and harbors resolution, and it is now in the hands of the Bureau of the Budget. The basis of our recommendations, I think, is essentially about the same as it would be on the beach-erosion project.

Mr. BRENNAN. It is exactly the same. Our policy is the same as it would be if made under beach-erosion law. I might add that the local people and the State do feel that the construction of breakwaters

by the Navy has been instrumental in the depletion of the beach, so they are not fully in agreement with our recommendations.

Mr. DAVIS. Will you give us a brief statement with respect to the situation at Redondo Beach?

Colonel ALLEN. I am not familiar with the situation at Redondo Beach.

Mr. BRENNAN. There is no study now under way at Redondo Beach, but it was included in a cooperative beach-erosion study of the coast of California. I do not have available the facts with respect to Redondo Beach, but I can supply them for the record.

(The matter referred to follows:)

REDONDO BEACH, CALIF.

The existing project was authorized by River and Harbor Act of May 17, 1950, in accordance with plans contained in House Document 303, 81st Congress, 1st session. The authorized plan provides for the construction of a small-boat harbor at an estimated Federal first cost (1953) of $4,368,000. No funds have been made available. The proposed harbor development would prevent further erosion of the beach within the harbor area, and would result in an overall betterment of shoreline conditions.

Consideration has been given to conditions at Redondo Beach in the Beach Erosion Control Report on the Cooperative Study of the Pacific Coastline of the State of California, Point Mugu to San Pedro Breakwater, prepared pursuant to the provisions of section 2 of the River and Harbor Act approved July 3, 1930, as amended and supplemented. The report of the Chief of Engineers was transmitted September 18, 1953, to the Congress for consideration and appropriate action. The report recommended, among other things, the construction of a barrier groin in the vicinity of Topaz Street in Redondo Beach (to be deferred pending demonstration of need); and the widening of the existing beaches between El Segundo and the Redondo Beach breakwater and between the proposed barrier groin near Topaz Street in Redondo Beach and Malaga Cove. The extent of Federal participation recommended is limited to one-third of the first cost of protecting the existing shoreline.

Mr. RILEY. Colonel Allen, in your opinion if additional funds were provided for these beach erosion studies, would that save money later on in the remedial work that would have to be done?

Colonel ALLEN. You are speaking of the beach erosion studies and not cooperative studies?

Mr. RILEY. If you speed up the studies and get the remedial work done, would that save money?

Colonel ALLEN. We believe it would. I would like to explain a few of the projects we are working on at the moment. There is one of bypassing. As has been mentioned, construction of a jetty frequently impounds considerable material to the starvation of inlets downdrift from the jetty. In Florida and California there are two projects successfully taking material from the land above the jetty and passing it to the beach downdrift, and we feel that considerable of the starvation problem will be eliminated in that way and that very economically.

ARKANSAS-WHITE-RED RIVER BASINS SURVEY

Mr. RILEY. The next study is the Arkansas-White-Red River Basins survey, which I believe covers some 7 or 8 States. Just what do you propose to find out in these studies and how would it be helpful to the economy of the country?

General CHORPENING. Well, the committee will recall that this study was authorized in the 1950 Flood Control Act and has been

under way ever since that time. This study is one that is participated in not only by the Corps of Engineers but by the Department of the Interior, the Department of Agriculture, the Public Health Service, the Federal Power Commission, the Department of Commerce and all of the States in the Arkansas-White-Red River Basins, and all of them are participating in the total cost. This study, it is expected, will be a thoroughgoing inventory of the water resources in that area and come up with projects that are considered to be justified based on that study. It is as thoroughgoing a study of a basin as perhaps has ever been attempted anywhere in the Nation, and all basic data that are available anywhere are being considered in the deliberations and will be incorporated into the final report. That is a rather broad statement of the scope.

Mr. RILEY. Is the purpose of this study to find out whether or not it would contribute to the economy of the surrounding territory to put banks along the river, or put dams to regulate water and have some irrigation projects? Are all these things involved?

General CHORPENING. That is correct, to consider all possible uses of water as well as possible measures that might be essential to protect from floodwaters, in other words, all phases of the water problems in that area.

Mr. RILEY. Do they have any irrigation problems in that area?

General CHORPENING. The Interior Department is very much involved in this study and irrigation is being very definitely considered.

Mr. RILEY. Is there much loss through this area from flooding?

General CHORPENING. In some places, yes, sir, rather severe. Of course, in the eastern part of this area the rainfall runs much heavier than in the central part of the area. Then you get out to the west end and get considerable rainfall or snowfall out there.

Mr. RILEY. This river system contributes also to some of your problems on the Mississippi?

General CHORPENING. Yes. The Arkansas, for example, is one of the large tributaries of the Mississippi, so anything done on the Arkansas will be helpful on the Arkansas, and on down the Mississippi.

Mr. RILEY. As I recall, this study was supposed to be completed in 2 or 3 years, but because of lack of sufficient appropriations it has been stretched out over a longer period.

General CHORPENING. That is correct. The original plan was to complete the study in 2 years, and then it was extended to 4 years, and then to 5 years. The funds requested herein look for completion by June 30, 1955.

Mr. RILEY. This is the final appropriation for this study?

General CHORPENING. That is correct.

Mr. RILEY. What is the present status of the program as to the time? Is it working out on schedule all right?

General CHORPENING. Yes. We estimate the work is about 80-percent complete as of the present and with the funds herein requested, $470,000, we firmly believe that the report can be completed on time.

Mr. RILEY. What was your actual allocation in 1954?

General CHORPENING. $475,000.

Mr. RILEY. I figure this overall study will cost $2.5 million altogether. Is that approximately correct?

General CHORPENING. The estimate of the Corps of Engineers is $2,874,900.

SURVEY COST TO GOVERNMENT

Mr. DAVIS. Can you tell us approximately what portion of the total cost of this survey is being borne by the Federal Government?

Mr. BRENNAN. From a money standpoint, sir, practically all of it. We have no information on the cost to the States or their contributions. I do not think they have expressed it in money terms. Their contribution is the loan of personnel and the work of their regular offices.

Mr. BEARD. The State agencies in all the States are actively participating and are producing a very sizable and valuable part of the work which goes into the survey, even though the dollar value is a rather small percentage compared to the Federal part of it.

General CHORPENING. I would like to add to that that there has been throughout this survey very full and wholehearted cooperation by the States in the area.

Mr. CEDERBERG. They ought to give us pretty full cooperation. We have spent millions and millions of dollars down there every year.

Mr. DAVIS. The total money contribution of the Corps of Engineers for this project was now much? Did you tell us that?

General CHORPENING. The total estimated cost is $2,874,900 to the Corps.

Mr. DAVIS. To the Corps?

General CHORPENING. Yes, sir.

Mr. DAVIS. Has that estimate remained constant?

General CHORPENING. Our original estimate of the cost to the Corps of Engineers was $3,568,000.

Mr. DAVIS. Even though you do mention that the extension of completion date has increased the cost, you are going to be able to get it done for an amount substantially less than the amount you had originally estimated?

General CHORPENING. Yes, sir.

Mr. DAVIS. This is it; you will not be back for any more money?

General CHORPENING. No, sir.

Mr. DAVIS. We will insert the total Federal cost of this survey for 1955 in the record.

(The matter referred to is as follows:)

Funds proposed in the 1955 budget for certain surveys—Arkansas-White-Red River Basin survey

	Amount
Army: Corps of Engineers	$470,000
Federal Power Commission	25,000
Interior:	
Office of the Secretary	18,000
Southwestern Power Administration	15,000
Bureau of Land Management	5,000
Bureau of Reclamation	285,000
Geological Survey	38,000
Bureau of Mines	187,288
National Park Service	14,251
Fish and Wildlife Service	72,000
Subtotal	634,539
Agriculture: Flood prevention	200,000
Total	1,329,539

NEW ENGLAND-NEW YORK SURVEY

Mr. DAVIS. The next project is the New England-New York survey. What is the present status of that survey, General?

General CHORPENING. This survey is approximately 75 percent complete, and the request for funds this year of $760,000 is required to complete the survey by June 30, 1955.

The committee will recall that last year there was some discussion about the advance of funds looking toward completing this on June 30, 1954. Those funds were not advanced as we were endeavoring to have you do, and the completion date of the survey was set back to June 30, 1955.

Mr. DAVIS. If I recall, we did advance you $200,000 at one time—not an increase in the total requested funds, but we did advance you that amount in order to permit you to go ahead, and then we reduced your 1954 appropriation accordingly. Did not that happen?

General CHORPENING. No, sir; that did not happen. It was agreed to, as I recall, in this committee, but was not agreed to in the Senate, so it was not done.

Mr. DAVIS. Did that seriously hamper the progress of your survey?

General CHORPENING. We were at that time endeavoring to insure completion by June 30, 1954. As a result of that and the appropriation made, it became necessary to extend the time to June 30, 1955.

Mr. DAVIS. You had originally estimated the total cost to the Corps of Engineers of this survey would be something under $3 million, but you now estimate it is going to cost you a little over $3 million because of the stretch-out of the funds?

General CHORPENING. That is correct. Our original estimate on this survey was $2,875,000. We now estimate it will be $3,044,900—about $170,000 more than what we originally estimated.

To make accurate cost estimates of these surveys is rather difficult. I think we have done quite well in that, if you consider these two surveys together, the net cost, even though the studies have been extended more than twice the original time, is less than our original estimates for those two surveys combined.

Mr. DAVIS. Your appropriation for fiscal 1954, for this project, then, was how much?

General CHORPENING. In fiscal 1954 the appropriation for this project was $600,000.

Mr. DAVIS. How much of that have you used thus far?

Mr. BRENNAN. The total cost of this special study was about $265,000 in the fiscal year 1954, up to November 30. (The information may be found on p. 105.)

Mr. DAVIS. The work is now progressing at a reasonable rate and you have an organization set up so that you anticipate with the amount of $760,000, or thereabouts, you will be able to finish this job by June 30, 1955?

General CHORPENING. That is correct, sir.

Mr. DAVIS. There is some pulling and hauling on these projects. Are you getting full cooperation from everybody concerned now?

General CHORPENING. Yes, sir. In the case of New York-New England, there have never been any difficulties there. That has gone pretty smoothly right along. We have had a little on the Arkansas-White-Red, as General Sturgis pointed out yesterday.

In November, at a conference between the Secretaries of Army, Interior, and Agriculture, and the staffs, a memorandum of understanding was reached, signed by all three Secretaries, and it is hoped and believed that the memorandum of understanding will result in allowing us to proceed there without further difficulty.

Mr. DAVIS. We will insert the total Federal cost for this survey for fiscal year 1955 in the record.

New England-New York survey

Army: Corps of Engineers	$760,000
Federal Power Commission	25,000
Interior:	
Geological Survey	31,300
Bureau of Mines	121,111
Fish and Wildlife Service	50,000
National Park Service	14,249
Subtotal	216,660
Agriculture: Flood prevention	100,000
Total	1,101,660

SAN FRANCISCO BAY

Mr. DAVIS. The third of the special studies, under "Examination and surveys," is at San Francisco Bay. You have requested $50,000 to permit the initiation of a comprehensive survey report.

I believe we discussed this thing with you last year to some extent?

General CHORPENING. Yes, sir.

Mr. DAVIS. And at that time the committee felt a little more complete preliminary examination should be made before we went along with the initiation of a comprehensive survey.

What can you tell us about that?

General CHORPENING. The preliminary examination has been completed—was completed last August—and is now before the River and Harbor Board for consideration. The preliminary examination was favorable. The River and Harbor Board, considering that this is a most important survey proposed to cost in the neighborhood of $3 million is actually, along with other matters that they have to consider on the west coast, going to be out there next week and confer with State officials and others in connection with it.

There is very considerable interest locally and by the State in this proposed survey.

This is an extremely difficult problem, which can only be resolved by a most detailed and comprehensive survey, including the use of models. You have two rivers coming into the bay and then arms of the bay with fresh water and salt water, mixed up with problems of transportation, and it is extremely involved.

Anticipating that the Board's action will be favorable, and considering the large scope of this survey, it was considered that we should ask for $50,000 to initiate it. Before these hearings are completed, no doubt we will have a better indication of what the River and Harbor Board actually concludes as a result of their trip out there, which might be helpful to this committee at that time, say, several weeks from now.

Mr. DAVIS. You have invested about $80,000 in your preliminary examination.

General CHORPENING. That is correct.

Mr. DAVIS. What is the authority for this comprehensive survey you are seeking to initiate?

General CHORPENING. If the Board goes along with the favorable recommendation in the preliminary examination and returns it to the Chief, then we could discuss the matter of authority with the Public Works Committee.

Mr. BRENNAN. That is left up in the air at the moment. Since the basic authority comes from the 1950 River and Harbor Act, it is not required that we go back to the committee. And that, I believe, is a matter we will probably consider after the Board acts.

General CHORPENING. Probably it will be a question of policy decided by the Chief of Engineers himself as to what to do.

Mr. DAVIS. You are anticipating a favorable report in seeking funds here to initiate that comprehensive survey.

General CHORPENING. That is correct.

Mr. DAVIS. You figure this survey is going to cost the Corps of Engineers in the neighborhood of what?

General CHORPENING. The cost of the survey is estimated to be $3 million. One of the matters that the Board will consider in the discussion with local interests is what amount the local interests will be willing to contribute to the cost of this survey.

Mr. DAVIS. In using the figure of $3 million, are you including contributions from other Federal agencies as well, or is that just the cost to the Corps of Engineers?

General CHORPENING. That is our gross estimated cost of making this survey. No other Federal agency, as far as I can see, will be involved.

Mr. BEARD. Interior would be involved to a slight extent.

General CHORPENING. Yes. But local interests, of course, very definitely are interested and there has been discussion out there of the possibility of their going ahead with the model, as I recall. So that is one of the matters the Board will want to look into very extensively in their report, as to what the Board might conclude should be a proper contribution by local interests in this particular instance.

Mr. DAVIS. Last year, of course, the subcommittee took the position that we did not have enough information to warrant us providing funds for this survey. Since then, you have completed your preliminary examination but we are still in the dark as to what we may anticipate in the way of contributions from State and local agencies and what we may anticipate from other agencies of the Federal Government itself, are we not?

General CHORPENING. That is correct.

Mr. DAVIS. Do you think there is pretty good prospect that you may be able to have that detailed information within the next month?

General CHORPENING. I would hope so. In view of the fact the Board is going to be out there next week, we should know very shortly after their return what their proposed action is going to be.

Mr. DAVIS. I think the best we can do now is to arrange with you to hold this matter open and suggest that you do present us with more complete information before the time comes for the subcommittee to make its decision.

General CHORPENING. Yes, sir.

Mr. HAND. When you say "5 years to complete," do you mean to complete the survey?

General CHORPENING. Yes, sir.

Mr. HAND. Let me ask you to tell me briefly just what we are thinking about doing out there, or is that question premature until you get the survey? You must be thinking about doing something; what is it, generally speaking?

General CHORPENING. Well, there have been in the past many proposals, plans, and suggestions of how we might be able to prevent the salt water from going up the streams—to keep the fresh water here and the salt water here [illustrating]. There are various methods——

Mr. HAND. Is there a salt water problem there?

General CHORPENING. Yes, sir.

Mr. HAND. As far as drinking water is concerned?

General CHORPENING. No, not as far as drinking water is concerned; but it is in connection with some of the agricultural or irrigation activities that go on in those rivers.

Mr. HAND. Do they irrigate with water from the bay?

General CHORPENING. They do not irrigate, but they reclaim land there and if there is too much salt in the water it has an effect on whether or not they can farm land in that area.

Then there have been proposals, instead of bridges, of building barriers or earth sections across the bay for fresh water retention and as bridges. And of course you have the navigation problem.

Mr. HAND. What is the navigation problem?

General CHORPENING. Obviously whatever may be built, be it bridges, dikes, levees, or other measures, navigation, which is very heavy in San Francisco Bay, must be taken care of. And the Navy has a large installation in there, as well.

Mr. HAND. Do I understand a navigation problem might be created by what we are doing out there, or proposing to do?

General CHORPENING. That is it; it is associated with the problem.

Mr. HAND. There is none now?

General CHORPENING. No.

Mr. HAND. We will have available to us the overall features of what is being thought of out in San Francisco Bay.

General CHORPENING. That is correct.

(NOTE.—Further testimony on this matter may be found beginning on p. 665.)

GREAT LAKES WATER LEVELS

Mr. CEDERBERG. The next special study under examination and surveys is that of the Great Lakes water levels, which has been of great concern to all of us in the Great Lakes area.

I would like to have your general comment on the present studies and survey, the estimated total cost, and the contemplated completion date.

General CHORPENING. The total estimated cost of this is $970,000, of which $270,000 has been made available through fiscal year 1954. The actual allocation of funds for this in fiscal year 1954 was $50,000. This was authorized in fiscal year 1952 by the House Public Works Committee. It will include consideration of damage caused by in-

creased lake levels, the possible control of lake levels, and the protection of shore property by dikes or levees.

One interim report has been submitted in which protection was recommended for three specific areas of the lakes. We expect that other interim reports will be submitted in the future as well, of course, as the final and comprehensive report.

The amount of $50,000 which we are requesting for fiscal 1955 will permit continuation of the work.

Mr. CEDERBERG. There has been considerable question and, shall we say, concern regarding the International Joint Commission, I believe it is, which has control of the letting out of water from some of the Canadian rivers in the upper peninsula past Lake Superior, as to their effect on the Great Lakes level. I assume that will all be covered in this survey and probably some recommendations made as to what should be done in that regard?

General CHORPENING. That is correct. I may state in connection with this survey that we are working very closely with all of the States involved, and there is a matter here in connection with some funds that we are using on this survey that I want to make very clear to the committee.

Mr. BEARD. Mr. Chairman, you recall that in previous years we were given money for a study of a quite thoroughgoing nature of the power-development possibilities at Niagara and a report was submitted by the Division Engineer on that. Of the funds that were available, there remained last year about $50,000 unused.

As part of this study of lake levels and the possible regulation of the lakes, we are also going into the effect which lake regulation would have on the power potential at Niagara in the ultimate development. So we have considered it was appropriate to use this residual $50,000 in that work which is also useful and will be valuable information for the lake-level study.

I wanted to make that clear to you, because actually the work on the Niagara power development as such has been finished, and we did not want any question to arise that suddenly you were surprised to find we were using the remaining funds under that appropriation in conjunction with our lake-level studies. We are satisfied it is entirely in accord with the intent of Congress and the committee in allowing us the money; but we did want to make the announcement here so that if there were any questions we could answer them.

Mr. DAVIS. General Chorpening, this problem of the levels of the Great Lakes is certainly not a new one, and, from time to time, various attempts are made to divert more water here and take some in another place, for some reason or other, and we can safely assume that all decisions with respect to this are being held in abeyance until this combined study has been completed; can we not?

General CHORPENING. That is correct. As you know, the diversion at Chicago is based on a Supreme Court decision and I believe there is a bill pending now.

Mr. BEARD. There have been several bills to increase that diversion. Generally we have been in opposition to those, except that we have not expressed strong opposition to one of them, which would give us a temporary increase which we could use more or less for observational purposes.

General CHORPENING. I believe the maximum increase in diversion was 1,000 second-feet.

Mr. BEARD. Yes sir.

Mr. DAVIS. You are taking the position at this time that it is proper to try that and see what it does; or do you feel, because of the fluctuations in the level there that General Chorpening mentioned, we ought to await the completion of these studies before going ahead with any increased diversion?

Mr. BEARD. I am sorry; I would have to submit something for the record on that. I cannot be too sure of just exactly the degree to which we have figured that thing.

(The matter referred to follows:)

The Corps of Engineers feels that a relatively small increased diversion, say in the magnitude of 1,000 cubic feet per second, which would make the total diversion 2,500 cubic feet per second, for a short period of time, say 2 or 3 years, for observational and experimental purposes, would not be detrimental.

Mr. DAVIS. A substantially increased diversion that coincided with a cycle of lower levels of the Great Lakes could be very detrimental to a great many interests on the Great Lakes, could it not?

General CHORPENING. Any diversion of any consequence should certainly be looked upon with a great amount of consideration before being approved.

LOCAL CONTRIBUTION

Mr. HAND. General, is there any local contribution at all toward the cost of this survey?

General CHORPENING. No, sir; other than, as I stated, that we are working very closely with the States, and their State officials who normally handle this sort of work have been giving freely of their time, data, and so forth, in working with us.

Mr. HAND. Is not this to a considerable extent the same old beach-erosion baby dressed up in new clothes? I see a statement in your justifications here "As a result of the unprecedented damage to shore properties by wave action and inundation" and so forth.

General CHORPENING. That phase of it is involved to quite an extent; but of course from this survey will come many other, we hope, favorable conclusions and facts, as I pointed out, having to do with future control of the levels, which will have an impact on navigation, power, and other things.

COLLECTION AND STUDY OF BASIC DATA

Mr. DAVIS. We will turn then to the second phase of our discussion this morning, that is, the collection and study of basic data, for which we have before us a request totaling $620,000.

TRANSFER TO GEOLOGICAL SURVEY

The first of those is an item for stream gaging, to be transferred to the Geological Survey, of $200,000.

In that connection, as well as with the other funds mentioned in this general title "Study and Collection of Basic Data," can you obtain for us and insert at this point in the record a statement with respect to unobligated and unexpended balances?

General CHORPENING. Yes, sir.

(The matter referred to follows:)

Status of Corps of Engineer funds transferred to U. S. Geological Survey for stream-gaging studies (as of Dec. 31, 1953)

Appropriation	Total funds available	Expenditures to Dec. 31	Obligations to Dec. 31	Unexpended balance	Unobligated balance
General investigations	$311,300	$113,196	$149,005	$198,104	$162,295
Construction, general	270,666	102,771	135,283	167,895	135,383
Operation and maintenance, general	526,686	180,803	237,999	345,883	288,687
Mississippi River	7,658	2,687	3,537	4,971	4,121
Total	1,116,310	399,457	525,824	716,853	590,486

Actual obligations for precipitation studies and miscellaneous studies for the last 5 years

Item	1949	1950	1951	1952	1953
Precipitation studies (USWB)	$537,700	$555,500	$552,800	$473,000	$513,500
Miscellaneous studies	1,322,600	1,493,000	1,426,000	1,068,900	627,000

Mr. DAVIS. Now will you tell us about this $200,000 item.

Mr. BEARD. The United States Geological Survey has had general authorization over many years as the responsible agency for collecting hydrological data and stream gaging information all over the United States for the general use of the public. That has been very useful, of course, to our agency and to all others engaged in this field.

But when we get down into specific areas, we find we need more complete information and sometimes information at different points on a river. So it has been established over practically the entire life of flood-control programs that funds that are appropriated to us we transfer to the United States Geological Survey for them to augment their general nationwide activity. That is what this $200,000 item is for.

To sum up very quickly, funds are transferred to the United States Geological Survey to do work for us of the type which they are especially capable and organized to handle.

The next item on precipitation studies is much the same sort of thing; only, instead of being streamflow information, it is rainfall information and meteorological studies which are vital to the conduct of our programs.

Mr. DAVIS. And that is a similar amount of $200,000 there.

Mr. BEARD. That is correct, which we transfer to the Weather Bureau for their use on our work.

Mr. DAVIS. How are these amounts arrived at? For instance, do you give the Geological Survey and the Weather Bureau a pretty good idea of what you are going to want from them and they tell you how much it is going to have to be? Is that the way it is done?

Mr. BEARD. To some extent, yes; although the extent of the work that is going to be done in any given year is worked out in close collaboration between the United States Geological Survey, or the Weather Bureau, and ourselves, and the estimates of cost they give us are also carefully gone over.

We are trying to keep the amount and the extent of the activity from being a fluctuating thing. The people who do it become specialists of great ability and are rather scarce, so we cannot afford to have the thing go up and down, we have to keep it rather steady. So much of this is a record-gathering activity, that if we have a discontinuous

record it loses a great deal of its value. To know what a stream does, we need to have the longest possible unbroken record.

The same thing is true with regard to rainfall in any given locality.

TRANSFER TO THE WEATHER BUREAU

(NOTE.—For status of funds, see p. 829.)

Mr. DAVIS. Tell us about the difference between this $200,000 that appears under this heading and the item of $292,000 that will be transferred to the Weather Bureau from authorized projects and studies.

Mr. BEARD. The items under this heading relate to a stream or a considerable stretch of a stream where we are preparing survey reports and also where we are conducting several different projects. In other words, it has a broader application than any given project and is not directly and immediately related to the project appropriation.

The other items you speak of are more pinpointed studies which we use in guiding us in the operation of a specific project.

As an illustration, let us say that here we have a dam in existence and in operation. We need to know what the rainfall is up above it and what the streamflow coming through the dam is likely to be, so that we will know when to close these gates, and how much to close the gates, and we relate that to the stream capacity right down the river. When that activity gets into a whole system of reservoirs, which we have up here in southern New York, where we have several, it becomes vital. It is the basis on which the whole operation scheme is set up.

That is the second item you are speaking of.

Mr. DAVIS. How much are you actually transferring to the Weather Bureau in the current fiscal year for purposes comparable to the $292,000 you mentioned?

Mr. BEARD. I am sorry; I do not have that. We will put that in the record for you.

Mr. DAVIS. You can obtain it?

Mr. BEARD. Yes, sir.

(The matter referred to follows:)

The amount of $292,413 was transferred to the United States Weather Bureau for precipitation studies from funds for authorized projects and studies in fiscal year 1954.

Mr. DAVIS. I am not sure it is clear in my mind as to just where you draw the line between those two items.

When you check your remarks will you expand upon that for the record, in order to get that clear in the record as to what the different use is?

Mr. BEARD. Yes, sir; we will place a statement in the record to clarify the testimony.

(The matter referred to follows:)

With respect to precipitation studies, the procurement of recording rain gage records, under the cooperative hydroclimatic network, constitutes the principal cost. The stations need to be fairly uniformly distributed throughout any area where water resource development programs are under way or are contemplated. Where authorized studies or projects are underway, the adjacent stations can be clearly charged to the associated projects. However, there are often large upstream or downstream areas for which adequate rainfall coverage is necessary to obtain a complete picture of storm rainfall for use in the planning, design, and operation of projects even though the areas are quite remote from authorized projects. For example, in the design of reservoir and spillway capacities, storms

are sometimes transposed considerable distances, under proper meteorological circumstances, in order to obtain information as to the amount of precipitation that might have been experienced over the area under study.

There are other areas where rainfall data are required for a survey which may be underway for a few years. If the density of existing stations is not sufficient, or of the incorrect type, additional stations are established and charged against survey funds. However, it may be desirable to continue the stations after the survey report is finished to insure continuity of record in the event a project is authorized. In such instances the station costs may have to be financed from general investigation funds during the interim period.

The services performed by the Hydrometeorological Section are so broad in nature that the cost is charged to general investigations.

In addition to the meteorological review of 830 storm studies, the Section has prepared 7 comprehensive reports of maximum possible precipitation over major river basins, studies of seasonal variation of the standard project storm, generalized estimates of maximum possible precipitation and many other studies which are used throughout the country and which are too general to be charged to authorized projects.

The cooperative rainfall and river stage reporting networks are charged entirely to authorized projects. Data reported to various collection centers at short intervals, usually every 6 hours, during major storms, are used directly in connection with the operation of specific river improvement projects.

In regard to the cooperative stream gaging program, the gaging stations are classified as general investigations or authorized project stations on the basis of the predominant use that is made of the individual station data, just as in the cooperative hydroclimatic network stations discussed above. If the data are required or used primarily in connection with design, construction or operation of an authorized project the cost of obtaining the data is charged to the project. The general coverage stations chargeable to general investigations are those stations required to comprise an adequate coverage in those areas where there are no projects or reports underway.

The general coverage data are required for many general studies, such as hydrologic studies where an accurate record of stream flow is essential in order that it might be correlated with observed, or transposed, precipitation to determine average infiltration losses for a particular storm or area.

The general coverage discharge data are also essential in determination of the rates of sediment transport of streams where there are no authorized projects.

Mr. DAVIS. You might use an example or two to clarify that, if you would.

Mr. BEARD. Yes, sir.

TRANSFER OF FUNDS TO THE FISH AND WILDLIFE SERVICE

Status of funds

Funds available for obligation, fiscal year 1954	$50,000
Obligations through Dec. 31, 1953	16,400
Unobligated balance Dec. 31, 1953	33,600
Funds available for expenditure, fiscal year 1954	50,000
Expenditures through Dec. 31, 1953	16,400
Unexpended balance Dec. 31, 1953	33,600

Mr. DAVIS. You have $40,000 for transfer to the Fish and Wildlife Service. How does that compare with your transfer in the current fiscal year?

General CHORPENING. It is identical in the amount.

Mr. DAVIS. It is an identical amount?

General CHORPENING. Yes, sir.

Mr. DAVIS. That has become pretty much of a standard amount for the services that you receive from Fish and Wildlife Service, has it not?

General CHORPENING. In recent years I think that is true.

Mr. BEARD. It has been around $30,000 or $40,000 for quite some years.

Mr. DAVIS. What is the nature of the services that the Fish and Wildlife perform for you for this purpose?

Mr. BEARD. Any time that a reservoir project is considered, or when it is built, it will have quite an influence on the fish and wildlife propagation and resources of that territory.

Public Law 732 in 1946 declared very specifically that it is the policy of Congress in considering a reservoir or water-development project that full consideration should be given to the impact of those proposed projects on the fish and wildlife resources, and it provided that the agency investigating the project must also call on the Federal agency, that is the Fish and Wildlife Service, and the State agencies, for their comments on the proposal. It also provided for the transfer of money from the investigating agency to the fishery agency which then does its part of the analysis. That is what this money is for. It is for the Fish and Wildlife Service to use for their analysis of their project studies and proposals generally throughout the country.

BEACH EROSION DEVELOPMENT STUDIES

Status of funds

Funds available for obligation, fiscal year 1954	$175, 179
Obligations through Dec. 31, 1953	85, 560
Unobligated balance Dec. 31, 1953	89, 619
Funds available for expenditure, fiscal year 1954	313, 925
Expenditures through Dec. 31, 1953	138, 047
Unexpended balance Dec. 31, 1953	175, 878

Mr. DAVIS. You have a request here for $80,000 for beach erosion development studies.

How does that compare with your appropriation for the current year?

General CHORPENING. We have $100,000 this year.

Mr. DAVIS. I believe the purposes of this request were pretty well discussed in connection with our previous questions with respect to cooperative studies on beach erosion?

General CHORPENING. Yes, sir, that is correct.

MISCELLANEOUS STUDIES

Status of funds

Funds available for obligation, fiscal year 1954	$196, 301
Obligations through Dec. 31, 1953	69, 658
Unobligated balance, Dec. 31, 1953	126, 643
Funds available for expenditure, fiscal year 1954	208, 378
Expenditures through Dec. 31, 1953	76, 508
Unexpended balance, Dec. 31, 1953	131, 870

Mr. DAVIS. You have this one final item under collection and study of basic data which you refer to as miscellaneous studies, and your request is for $100,000.

How does that compare with your appropriation for the current year?

General CHORPENING. We had $160,000 this year.

Mr. DAVIS. What do you generally include under the term of "miscellaneous studies"?

Mr. BEARD. There are a number of different categories, Mr. Chairman, of activities that come under that, and I will mention a few of them.

This is covered to some extent in pages 20 and 21 of the justifications.

We have a few stream gage and rainfall recording activities which do not actually come within our program in cooperation with the

Weather Bureau and the USGS. There is very little of that, but it is one of the items covered here.

Under the international treaties with Canada that have been worked up over the years, and the control boards that the International Joint Commission establishes under those treaties, our agency is the primary United States representative. For instance, the Control Board operates the gates in the St. Marys River to control Lake Superior and the Kootenai Lake out in Idaho and British Columbia, and a number of others. Our activities along this line are financed from this fund.

We have numerous inquiries from the general public and from Members of Congress for factual data on all kinds of questions in the field of water resources. We have to refer those to our district offices and sometimes they involve a small reconnaissance; sometimes it is just a case of somebody looking up a few records, and those activities have to be financed under this fund. There are other things that are of a general or miscellaneous nature which are vital and important to the conduct of the Government's responsibility, but they do not actually come under these other specific headings that are in the appropriation.

There is one other thing that I should have mentioned: our flood emergency studies and our assistance to towns and other communities in keeping themselves alerted and aware of meeting their flood emergency before they get into the problem again. That is a general expense which we finance out of this group so far as we can.

General CHORPENING. We have an overall flood emergency standard operating procedure manual which we issue out of our office and the division and district offices likewise have such a manual or procedure, all set up so that if there is a flood at any place, we have anticipated the problem so that we may move with the utmost expedition to take care of the situation that might arise.

Mr. DAVIS. I would suggest that before these hearings are completed that it might be well for you to bring us a sample of a flood emergency manual and some of these other things that you develop as a result of these studies so we will have a chance to thumb through it and study it a little during the course of the hearings.

General CHORPENING. We shall be glad to do that.

(Copies of sample reports were furnished the committee.)

TRANSFER OF FUNDS TO OTHER AGENCIES

Mr. HAND. I want to go back briefly to the question which the chairman was asking about the $292,000 in the case of the Weather Bureau and the $739,000 in the case of the Geological Survey which is transferred to those agencies.

I think I understand the situation fairly well and that the allocations of those funds have to be, of necessity, pretty arbitrary; do they not? You provide a certain amount which you think they will need and give it to them; is that correct?

General CHORPENING. It is not quite that arbitrary, but, of course, as between the amounts that would come under the description as given by Mr. Beard, between these two, it is not subject to a complete and absolute definite refinement.

Mr. HAND. What I mean is when you get into the other item, which is $739,000 in the case of the Geological Survey, and the other is $292,000, and forgetting the other for a minute, there is a general

division there which I think we all understand; but those additional amounts which are divided between projects have to be pretty arbitrary; do they not? Who can say what the value to the lower Mississippi is by a study of precipitation? You have to allot a certain sum of dollars; do you not?

General CHORPENING. It is a matter of general use as to how we make the distribution. We try to determine which project should carry this additional amount of money.

Mr. HAND. These amounts are fairly substantial in character, are they not, and the work is generally done by the regular personnel of the two bureaus—the Weather Bureau and the Geological Survey? There is not very much equipment and machinery involved; is there?

General CHORPENING. That is correct.

Mr. TOFANI. They do have to build some extra stations and that is where a good part of that cost goes.

General CHORPENING. That is right; the stations in the field.

Mr. BEARD. Mr. Hand, it is true that a large part of this is for personnel, and you are correct in calling it the regular personnel of those other two agencies. However, if it were not for this, they would not have to have additional personnel.

Mr. HAND. They would not have to have the personnel?

Mr. BEARD. They would not have as many people; it is not a duplication.

Mr. HAND. That is right and I can understand that; which brings me to my final question about which there may be a very good accounting and budgetary reason for it.

As an alternative to this rather peculiar method by which the committee cannot really get at the details and should not, because it is somewhat out of our jurisdiction, as an alternative to this method whereby we appropriate money to you and you transfer it to the Weather Bureau and to the Geological Survey and to the Fish and Wildlife Service, is there any merit in the suggestion that the appropriation be made to them directly by the Subcommittee on Interior and the Subcommittee on Commerce in which they would just say, "We have to do this for the Army engineers, but we need this much money in order to do it for them"?

Is there any objection to that alternative?

Mr. BEARD. That comes up rather frequently in the Bureau of the Budget in their discussion with us and with the other agencies. You can do it either way. It seems to be the decision each time it comes up that it is preferable to keep it in our agency. For instance, all of the costs that relate to our program, even though the money in the end is transferred to the other agency, because your committee is better equipped or it is more appropriate, that your committee consider whether these transfers are in order as they relate to our program.

Mr. HAND. I suppose it is in somewhat of a balance. We do not get into too much detail here as to what the Geological Survey does with the money you give them.

Mr. BEARD. We keep track of what they do with our money.

Mr. HAND. The alternative method has been considered from time to time but the Bureau of the Budget thinks it ought to be this way?

Mr. BEARD. Up to now they have regularly come out with the same decision.

Mr. HAND. I do not have any strong feelings about it one way or the other.

General CHORPENING. I have this thought on it: First, these funds are a part of our overall program and really belong in our program; second, if it is appropriated to us and we turn it over to them, then we can pretty well tell them what they are going to do for us. If it were appropriated directly to them there might be a little difficulty in our getting from them what we, in fact, need and desire.

Mr. HAND. Thank you, General.

MONDAY, JANUARY 18, 1954.

CONSTRUCTION GENERAL

WITNESSES

MAJ. GEN. SAMUEL D. STURGIS, CHIEF OF ENGINEERS
BRIG. GEN. C. H. CHORPENING, ASSISTANT CHIEF OF ENGINEERS FOR CIVIL WORKS
LT. COL. GEORGE F. DIXON, JR., ASSISTANT CHIEF OF CIVIL WORKS FOR RIVERS AND HARBORS

Amounts available for obligation

	1953 actual	1954 estimate	1955 estimate
Appropriation or estimate		$278,670,000	$308,322,000
Prior year balance available			28,629,359
Balance transferred, pursuant to Public Law 153, from—			
"Maintenance and improvement of existing river and harbor works"		16,160,223	
"Flood control, general"		66,958,620	
"Flood control general, emergencies"		1,324	
"Flood control, Sacramento River, California"		11,436	
"Alteration of bridges over navigable waters"		877,797	
Reimbursements from non-Federal sources		90,000	90,000
Reimbursements from other accounts		510,000	510,000
Total available for obligation		363,279,400	337,551,359
Balance available in subsequent year		−28,629,359	
Obligations incurred		334,650,041	337,551,359
Comparative transfer from—			
"Maintenance and improvement of existing river and harbor works"	$155,028,913		
"Flood control, general"	225,408,791		
"Flood control, Sacramento River, California"	997,223		
Total obligations	381,434,927	334,650,041	337,551,359

NOTE.—Reimbursements from non-Federal sources are received from private individuals, commercial concerns, nonappropriated funds, and States and municipalities (33 U. S. C. 558, 559, 571, 701 and 701k).

Obligations by objects

Object classification	1953 actual	1954 estimate	1955 estimate
CORPS OF ENGINEERS			
Summary of Personal Services			
Total number of permanent positions		2,367	2,367
Full-time equivalent of all other positions		160	160
Average number of all employees		2,234	2,234
Average salaries and grades:			
General schedule grades:			
Average salary		$4,694	$4,729
Average grade		GS-6.8	GS-6.8
Crafts, protective, and custodial grades:			
Average salary		$3,480	$3,510
Average grade		CPC-5.5	CPC-5.5
Ungraded positions: Average salary		$3,112	$3,112

Obligations by objects—Continued

Object classification	1953 actual	1954 estimate	1955 estimate
CORPS OF ENGINEERS—continued			
Summary of Personal Services—Continued			
Personal service obligations:			
Permanent positions		$8,445,897	$8,467,485
Other positions		427,000	427,000
Regular pay in excess of 52-week base		32,103	32,515
Payments above basic rates		873,000	873,000
Total personal service obligations		9,778,000	9,800,000
Direct Obligations			
01 Personal services		9,658,000	9,680,000
02 Travel		241,500	205,000
03 Transportation of things		139,700	125,000
04 Communication services		19,600	25,000
05 Rents and utility services		174,500	200,000
06 Printing and reproduction			250
07 Other contractual services		11,992,000	13,000,000
Services performed by other agencies		750,000	750,000
Services performed by "Revolving fund, Corps of Engineers"		37,000,000	39,000,000
08 Supplies and materials		1,726,834	2,002,300
09 Equipment		996,000	900,000
10 Lands and structures		267,698,747	269,798,809
13 Refunds, awards, and indemnities		$8,000	$7,000
15 Taxes and assessments		35,000	30,000
Subtotal		330,439,881	335,723,359
Deduct charges for quarters and subsistence		610,000	610,000
Total direct obligations		329,829,881	335,113,359
Obligations Payable Out of Reimbursements From Other Accounts			
01 Personal services: Civilian		120,000	120,000
02 Travel		3,000	3,000
04 Communication services		1,200	1,200
05 Rents and utility services		3,000	3,000
07 Other contractual services		292,800	292,800
08 Supplies and materials		180,000	180,000
Total obligations payable out of reimbursements from other accounts		600,000	600,000
Total obligations		330,429,881	335,713,359
ALLOCATION TO BUREAU OF MINES, DEPARTMENT OF THE INTERIOR			
07 Other contractual services		82	
ALLOCATION TO BUREAU OF INDIAN AFFAIRS, DEPARTMENT OF THE INTERIOR			
07 Other contractual services		14,854	
ALLOCATION TO BUREAU OF CENSUS, DEPARTMENT OF COMMERCE			
06 Printing and reproduction		56	
ALLOCATION TO BUREAU OF PUBLIC ROADS, DEPARTMENT OF COMMERCE			
10 Lands and structures		33	
ALLOCATION TO SOIL CONSERVATION SERVICE, DEPARTMENT OF AGRICULTURE			
07 Other contractual services		5	
ALLOCATION TO DEPARTMENT OF AGRICULTURE, GENERAL			
07 Other contractual services		1,500	
ALLOCATION TO FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR			
Total number of permanent positions		19	17
Full-time equivalent of all other positions		6	5
Average number of all employees		24	21
Average salaries and grades:			
General schedule grades:			
Average salary		$4,333	$4,333
Average grade		GS–5.1	GS–6.1

Obligations by objects—Continued

Object classification	1953 actual	1954 estimate	1955 estimate
ALLOCATION TO FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR—continued			
01 Personal services:			
Permanent positions		$82,257	$72,340
Other positions		14,410	13,600
Regular pay in excess of 52-week base		300	270
Payment above basic rates		1,940	1,950
Total personal services		98,907	88,160
02 Travel		6,909	4,500
03 Transportation of things			100
04 Communication services		250	1,000
07 Other contractual services		415,417	238,892
08 Supplies and materials		21,693	5,400
09 Equipment		11,206	90,050
10 Lands and structures		3,160,003	1,106,898
Total obligations		3,714,385	1,535,000
ALLOCATION TO BUREAU OF RECLAMATION, DEPARTMENT OF THE INTERIOR			
Total number of permanent positions		2	
Average number of all employees		2	
Average salaries and grades:			
General schedule grades:			
Average salary		$6,175	
Average grade		GS–11.0	
01 Personal services:			
Permanent positions		$12,402	
Payment above basic rates		48	
Total personal services		12,450	
07 Other contractual services		5,000	
08 Supplies and materials		1,000	
10 Lands and structures		21,300	
Total obligations		39,750	
ALLOCATION TO FOREST SERVICE, DEPARTMENT OF AGRICULTURE			
Total number of permanent positions		11	
Full-time equivalent of all other positions		4	
Average number of all employees		15	
Average salaries and grades:			
General schedule grades:			
Average salary		$4,045	
Average grade		GS–6.5	
01 Personal services:			
Permanent positions		$41,609	
Other positions		11,731	
Regular pay in excess of 52-week base		160	
Total personal services		53,560	
02 Travel		450	
03 Transportation of things		575	
04 Communication services		265	
05 Rents and utility services		1,500	
07 Other contractual services		11,250	
Services performed by other agencies		1,850	
08 Supplies and materials		12,559	
09 Equipment		6,370	
10 Lands and structures		90,000	
15 Taxes and assessments		450	
Total obligations		178,829	
ALLOCATION TO GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR			
Total number of permanent positions		40	47
Full-time equivalent of all other positions		7	9
Average number of all employees		45	53
Average salaries and grades:			
General schedule grades:			
Average salary		$4,578	$4,608
Average grade		GS–6.8	GS–6.8

Obligations by objects—Continued

Object classification	1953 actual	1954 estimate	1955 estimate
ALLOCATION TO GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR—continued			
01 Personal services:			
Permanent positions		$170,400	$211,300
Other positions		19,000	22,000
Regular pay in excess of 52-week base		600	700
Total personal services		190,000	224,000
02 Travel		10,000	10,000
03 Transportation of things		500	500
04 Communication services		800	800
05 Rents and utility services		1,000	1,200
06 Printing and reproduction		500	500
07 Other contractual services		10,000	10,000
08 Supplies and materials		49,766	47,700
09 Equipment		8,000	8,000
15 Taxes and assessments		100	300
Total obligations		270,666	303,000
SUMMARY			
Summary of Personal Services			
Total number of permanent positions		2,439	2,431
Full-time equivalent of all other positions		177	174
Average number of all employees		2,320	2,308
Average salaries and grades:			
General schedule grades:			
Average salary		$4,604	$4,729
Average grade		GS–6.8	GS–6.8
Crafts, protective, and custodial grades:			
Average salary		$3,480	$3,510
Average grade		CPC–5.5	CPC–5.5
Ungraded positions: Average salary		$3,112	$3,112
Personal service obligations:			
Permanent positions		$8,752,625	$8,741,125
Other positions		472,141	462,600
Regular pay in excess of 52-week base		33,163	33,485
Payment above basic rates		874,988	874,950
Total personal service obligations		10,132,917	10,112,160
Direct Obligations			
01 Personal services		10,012,917	9,992,160
02 Travel		258,859	219,500
03 Transportation of things		140,775	125,600
04 Communication services		20,915	26,800
05 Rents and utility services		177,000	201,200
06 Printing and reproduction		556	750
07 Other contractual services		12,450,108	13,248,892
Services performed by other agencies		751,850	750,000
Services performed by "Revolving fund, Corps of Engineers"		37,000,000	39,000,000
08 Supplies and materials		1,811,852	2,055,400
09 Equipment		1,021,576	998,050
10 Lands and structures		270,970,083	270,905,707
13 Refunds, awards, and indemnities		8,000	7,000
15 Taxes and assessments		35,550	30,300
Subtotal		334,660,041	337,561,359
Deduct charges for quarters and subsistence		610,000	610,000
Total direct obligations		334,050,041	336,951,359
Obligations Payable Out of Reimbursements From Other Accounts			
01 Personal services: Civilian		120,000	120,000
02 Travel		3,000	3,000
04 Communication services		1,200	1,200
05 Rents and utility services		3,000	3,000
07 Other contractual services		292,800	292,800
08 Supplies and materials		180,000	180,000
Total obligations payable out of reimbursements from other accounts		600,000	600,000
Total obligations		334,650,041	337,551,359

Analysis of expenditures

	1953 actual	1954 estimate	1955 estimate
Unliquidated obligations, start of year			$118,939,072
Obligations incurred during the year		$334,650,041	337,551,359
Obligations transferred, pursuant to Public Law 153, from—			
"Maintenance and improvement of existing river and harbor works"		40,491,613	
"Flood control, general"		120,459,022	
"Alteration of bridges over navigable waters"		695,162	
"Flood control, Trinity River, Tex."		50,489	
"Flood control, Sacramento River, Calif."		124,897	
		496,471,224	456,490,431
Deduct:			
Reimbursements		600,000	600,000
Unliquidated obligations, end of year		118,939,072	125,890,431
Total expenditures		376,932,152	330,000,000
Expenditures are distributed as follows:			
Out of current authorizations		170,000,000	200,000,000
Out of prior authorizations		206,932,152	130,000,000

LOCAL CONTRIBUTION

Mr. DAVIS. The subcommittee will resume this morning by beginning our discussions of the various projects for construction which are under the jurisdiction of the Corps of Engineers and the civil functions program.

Before beginning the discussions on the first of the projects, I would like to ask you, General, one or two questions about the use of local contributions. We had some discussion on that subject during the presentation of this matter on last Thursday, since which time it has been called to our attention that in cases where there are local contributions—and we hope in accordance with the policy that you enunciated here there will be more of them—that in the past it has been the practice to use up the Federal money without a corresponding use of the funds which have been contributed by local interests. Would you care to comment on that, General?

General CHORPENING. I do not know what specific project the chairman has in mind, but it has not been the policy of the Corps of Engineers to spend funds contributed by local interests at a greater rate or at a lesser rate than the funds appropriated by the Federal Government.

Now, due to peculiar conditions that may exist in some particular project, it might be that we have gotten out of step in that connection.

Mr. DAVIS. Those funds, whether they be Federal appropriation or local contributions, are put into the same pot and withdrawn as construction proceeds; is that correct?

General CHORPENING. That is generally correct. Of course, the local contributions are determined by the authorizing legislation or the survey report on which the authorization is based, and they usually are to cover certain specific items of the construction. So, other things being equal, they are expended when the particular item is constructed.

GARZA-LITTLE ELM RESERVOIR, TEX.

Mr. DAVIS. One specific instance that demonstrates what we have in mind is the Garza-Little Elm, where over a period of the past 3 fiscal years, including the present one, the unexpended balance of

Federal funds had been quite noticeably reduced, but the unexpended balance of the local funds have just been as noticeably inclining.

General CHORPENING. Yes. I am somewhat familiar with that situation on the Garza-Little Elm project, but I do not have all the details on that in mind at this time, and when we reach that project in our normal testimony I can give to the chairman and to the committee very full information.

I will say this: That the contributions required there was not only cash but also the turning over to the Federal Government of certain facilities, now owned by the city, which are to be included in the project as completed. The city has a water supply dam and reservoir of its own, which we take over as a part of the Garza-Little Elm project. We will be prepared to give the committee full details on that situation.

Mr. CEDERBERG. We find that on a project after it is finally cleared and authorized, where changes are possibly made in the project, so far as construction and otherwise is concerned the amount that might be involved in the way of local interest is not disturbed, but the Federal Government bears all of the cost of the changes on that particular project. Generally speaking, is that true?

General CHORPENING. That is generally correct. In the past, the authorization legislation based on the survey document has usually specified the amount, the specific amount, which would be contributed by the local interests. We recognize that, with rising prices, such an authorization does operate to the benefit of the local interests, and it is our present procedure in the survey report not to specify an amount in dollars, but rather on a percentage basis.

Mr. CEDERBERG. I think that is the more equitable way to do it. It would seem to me that most any project that comes forward, will, by the time construction actually takes place, have certain changes that will be of advantage to the project, which will change the proportion, so that the percentage-proportion basis would be the more equitable way for it to be done.

General CHORPENING. Yes; I agree with that completely.

General Sturgis reminds me that, at the present time, there is a project in Texas where, under the authorization, there was a specific amount of local cash contribution included. We now find, as we have gone on with the plans on that project, that the costs have increased, and that other items seem to be requiring modification to conform to local interest desires. We have told the local interests in this case that we will present the matter to the Public Works Committee in the Congress before we will proceed.

Mr. RABAUT. Has it been the custom in the past that the local interests have asked for extraordinary things to be done, improvements to be made, after the construction has gotten under way?

General CHORPENING. Many times, particularly on local protection projects, after we get into the plans or construction, local interests have desired that perhaps they should have a concrete floodwall instead of a levee, due to the fact that the concrete wall would require less real estate; or that they would like to make a deviation from the plan, by setting a floodwall or a levee farther back from the river because of the difficulty of securing real estate. Those things happen many times. However, our policy is that, if it is feasible to do so, and

the local interests want it the additional cost of making the change must be borne by the local interests.

Mr. RABAUT. Of course, the Appropriations Committee is interested in what it costs.

General CHORPENING. Yes. That is our policy, and I have had, in the past 3 years, many of those come to my attention. We have replied that if they want the change, and we decide it is engineeringly feasible, the local interests must bear the additional cost.

Mr. RABAUT. That sounds like a good policy.

NAVIGATION PROJECTS

General CHORPENING. Mr. Chairman, before we take up the individual items, may I make a brief statement on the overall matter of navigation projects.

Mr. DAVIS. We will be very glad to have you do so.

General CHORPENING. The navigation projects for construction in the fiscal year 1955 budget total 22, and the amount asked for in the budget is $36,710,000. Of the 22 projects, 10 are either new starts or resumptions of projects on which some work had previously been done.

Now, of the 22 projects included in the funds requested here, we will substantially complete 4 projects.

Mr. DAVIS. We are very glad to have that summary statement.

DEMOPOLIS LOCK AND DAM, ALA.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$1,811,066	$3,006,915
Dec. 31, 1953	954,257	3,155,356
June 30, 1954 (estimated)	75,500	190,500

Statement of average annual benefits

Navigation:	
Elimination of the annual charges on the capital investment required for a replacement in kind of the existing structures, which will have reached the end of their economic life	$344,000
Elimination of channel maintenance costs from lock No. 4 to lock No. 7	135,000
Elimination of operation and maintenance costs of locks Nos. 4, 5, 6, and 7	96,000
Savings to water carriers from reduction in lockage and travel time	630,000
Total annual benefits	1,205,000
Average annual charges	886,000

Data on continuing contracts

	Estimated contract earnings
Continuing contracts in force:	
Clearing, parcels 3 and 5	$658,000
Clearing, parcel 1	369,600
Construction, overflow section of dam, lock, channels, 1 house, grading and landscaping, and utilities	13,530,600
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955: Demolition of locks and dams 5, 6, and 7	222,900

Mr. DAVIS. We turn to the first of the projects listed as navigation projects, the "Demopolis lock and dam," the justification for which begins on page 37.

This project has a total estimated Federal cost of $20,397,000, with an appropriation in the current fiscal year of $4,655,000. The request before us is $3.5 million, which will bring the project to 98 percent of its completion.

I note first of all you have made a decrease in the total estimated cost of the Demopolis lock and dam. Is that a fairly small amount on the basis of your experience of the work during the past fiscal year, or does it represent any change in the project itself?

General CHORPENING. It represents a change in the project to the extent that we have eliminated some facilities, repair facilities, which we had originally proposed at this project. We will now use those available at Tuscoloosa instead.

Also, we are approaching the end of the project, and as the committee will recall on other projects in the past year, when we see more clearly what our fund requirements are going to be, we sometimes can make reductions.

Mr. DAVIS. How much of that $163,000 reduction here can you attribute to the decision to not build some of the maintenance facilities?

Colonel DIXON. The reduction of $163,000 at Demopolis comes about in this way: The price went up on reservoir clearing and we had to add some permanent operating equipment which increased the cost by $222,100. Then, there was the deletion of the shops and yard, as General Chorpening has explained to you, which brought about a reduction of $385,100. The net difference being the $163,000, which is given as the reduction of the overall cost.

PROGRESS OF THE PROJECT

Mr. DAVIS. Last year when you testified on this project there were some indications that the work was not going along as rapidly as you hoped it would. Can you tell the committee about the progress on the project during and since the last hearings?

General CHORPENING. At the time I testified last year I stated to the committee that we had had some difficulty with the construction contractor; that we had just made arrangements whereby an experienced contractor would take over the work for the prime contractor who, of course, we still held responsible. It has worked out very, very well. The new group did go in and they got the job under way very promptly, and construction has proceeded efficiently there since that time.

Mr. DAVIS. You appear to be moving along at such a rate now that you are going to be able to use some of the funds which were listed as unexpended and unobligated at the close of the 1953 fiscal year?

General CHORPENING. Yes, sir.

Mr. DAVIS. You are picking up some of the slack from the previous year?

General CHORPENING. Yes, sir.

Mr. DAVIS. Specifically what are the major items to be acquired with the $3.5 million in this fiscal year?

Colonel DIXON. The major items for which this money will go is for continuation of the contract for the lock and dam. There will be

a certain amount of relocation work on county roads and powerlines; demolition of locks 5, 6, and 7, the old locks, which would cause trouble in the stream and which should all be removed. There will also be a continuation of reservoir clearing. Later on we will have to provide some housing at the site.

Mr. DAVIS. That is for the maintenance staff?

Colonel DIXON. That is for the operation and maintenance staff.

Mr. DAVIS. How many, actually, does that involve?

Colonel DIXON. We have that question under study. In view of the fact that Demopolis is located near the small town of Demopolis, we consider that we can delete a number of houses, and we hope to get by with 2, although the previous plan was that we would want 5. That is not definitely resolved as yet, but that will be done.

Mr. DAVIS. The question has come up with respect to the building of a bridge on a county road. What is the necessity for that, and what is the estimated cost of doing it?

Colonel DIXON. Mr. Chairman, during the initiation of a project like this, all relocation questions are not always resolved. We get into that as we go along. In this particular case we were aware that certain bridge relocations, county road relocations, would have to be done. This one in fact was under discussion this week by the district engineer with the county concerned. We have provided sufficient funds in the cost estimates to pay for that, at an estimated cost of $200,000. We expect there will be a reduction from that figure. We are not expecting any increased cost in the figure. Just exactly what has to be done we are not in position to say. It looks like the bridge will not have to be raised, but there are certain revetment works that will have to be made around the piers.

Mr. DAVIS. Is this actually the replacement of some obsolete locks, 2, 3, and 4 locks?

Colonel DIXON. Four locks, Nos. 4, 5, 6, and 7.

Mr. DAVIS. In view of what you have told us with respect to the housing and this bridge, it may be that the amount of the final balance which you show in the justifications to be required in the years subsequent to the fiscal year 1955, may be something less than $331,000; is that correct?

Colonel DIXON. That is our expectation at this time.

Mr. HAND. This is entirely a navigational project?

General CHORPENING. That is correct, sir.

Mr. HAND. The completion of this 1 lock will replace 4 other locks, and thus facilitate the flow of river traffic?

General CHORPENING. That is correct. Of course, this is a much larger and more modern lock than the old locks, and where we now have 4 small locks, we will have only 1 large lock and the amount of time it takes to transit the tows through this reach will be reduced.

Mr. HAND. Do I understand this is primarily for the carrying of iron ore to the steel mills?

General CHORPENING. Iron ore for the steel mills; coal is the largest segment of tonnage going downstream.

Mr. HAND. What is the extent of local contribution on the entire project, if any?

General CHORPENING. There is no local contribution on this project.

Mr. HAND. No consideration has been given, under present law, to the imposition of a fee for the use of this facility, I suppose?

General CHORPENING. That is correct, sir.

MOVEMENT OF IRON ORE

Mr. HAND. I notice in your justifications you say among other things that the improvement is also needed because of the immediate prospective movement of 1,250,000 tons of iron ore from South America to the steel mills of Birmingham. Where is that iron ore supposed to come from; Venezuela?

General CHORPENING. Venezuela, yes, sir.

Mr. HAND. Is that the source of iron ore supply which is now controlled largely by United States Steel Co.?

General CHORPENING. That is correct.

Mr. HAND. Do they operate the mills in Birmingham?

General CHORPENING. Yes, sir.

Mr. HAND. Is it contemplated so far that a great deal of this iron ore must be moved to Birmingham, or the bulk of it will go to the new place at Fairless near Morrisville?

General CHORPENING. My recollection is that the United States Steel Co. eventually proposes to move some of it, in the order of 10 million tons, out of Venezuela each year. We figure about 1.5 million tons would go to Mobile and up this river, but the bulk will go to their Fairless plant, and perhaps other places.

LOCAL CONTRIBUTION

Mr. HAND. General Sturgis, in view of the fact that this project, which is of considerable magnitude, does not require any local contribution, how do you reconcile the local contribution for the Delaware where there are several million tons of steel movements including those to the Fairless plant?

General STURGIS. We recommended in the report a local contribution for navigation, beyond the usual requirements of spoil disposal areas, lands, and similar items.

It has been the usual practice in the past, when one particular concern was benefited, to recommend such a local contribution. But when the project is for the general good, then we do not recommend it.

Mr. HAND. The local interests in the Delaware Valley, that you refer to, for that section of the project, are requiring $18 million from the steel companies?

General STURGIS. The $18 million represents 50 percent of the estimated $36 million for the deepening of the channel from 35 to 40 feet. We have not recommended in the Delaware River report, Mr. Hand, that local interests make payment where there is a general benefit. Where deepening the channel from 35 to 40 feet would benefit a single concern we have recommended a 50-percent contribution from the local interests, recognizing that the other 50 percent might be for the general good later, when additional plants are built.

Mr. HAND. That is the section of the river, of course, from Philadelphia to Trenton?

General STURGIS. Yes; that is the section of the river from Philadelphia to Trenton.

Mr. HAND. As I understand the opposition indicated in the report, to that contribution, from that section from the steel company was because it was unprecedented. But you have just referred to the fact that there are precedents?

General STURGIS. Yes, there are precedents.

Mr. HAND. Could you give me 1 or 2 illustrations?

General STURGIS. We will be able to furnish them for you, I recall while sitting on the rivers and harbors board a number of instances.

(The matter referred to follows:)

EXAMPLES OF AUTHORIZED AND RECOMMENDED PROJECTS FOR WHICH CASH CONTRIBUTION IS REQUIRED FOR CONSTRUCTION

Among existing authorized projects involving cash contributions is the 26-foot depth project for the San Joaquin River and Stockton Channel, Calif., authorized by river and harbor acts through August 26, 1937, toward which local interests have contributed $1,307,500 in cash, equal to 50 percent of the first costs of dredging. Local interests will be required to contribute an additional $550,000 toward construction authorized by the River and Harbor Act of May 17, 1950. Local interests have also contributed $1,365,000, or half the construction costs of the 30-foot deep Houston ship channel, Texas, although project dimensions subsequently were modified without further local cash contributions. The Titanium Pigment Co. has contributed $66,000, or 50 percent of the first costs, for dredging the south channel of the Raritan River, also authorized by the act of August 26, 1937. Recently recommended but not yet authorized improvements involving cash contributions toward a part of the costs of navigation improvements benefiting primarily a single company, are the channel to the La Quinta plant of the Reynolds Metals Co. on the Port Aransas-Corpus Christi Waterway, Tex. (H. Doc. 89, 83d Cong., 1st sess.); Town River, Quincy, Mass., channel primarily for use of the Quincy Oil Co. and contracting distributors (H. Doc. 108, 83d Cong., 1st sess.); access channel to Hudson Paper Co., Rice Creek, Putnam County, Fla. (H. Doc. 406, 82d Cong., 2d sess.); and improvements largely for use of J. H. Smith Co., menhaden processors, at Shoal Harbor and Compton Creek, N. J. (H. Doc. 89, 82d Cong., 1st sess.).

Mr. CEDERBERG. Is it correct that that is a part of the overall waterway going from Mobile to Birmingham?

General CHORPENING. That is correct.

TONNAGE

Mr. CEDERBERG. Do you have any figures as to the tonnage carried each year from Mobile to Birmingham, say, for the last year?

Colonel DIXON. The tonnage on that waterway is normally long-haul traffic, carrying it from one extreme at Mobile to the other. The traffic for 1951 was 2,712,819 tons. In 1952 it dropped to 2,553,745 tons. That reduction was brought about by a reduction in traffic of about 350,000 tons due to a strike in the steel mills.

Mr. CEDERBERG. In other words, that is the approximate tonnage that has been going up there year after year, from Mobile to Birmingham?

Colonel DIXON. Yes. Of course, over a long period of time it has materially increased, but in recent years that has been the tonnage.

Mr. CEDERBERG. Do you have any figures as to the estimated overall total cost from Mobile to Birmingham of this waterway?

Colonel DIXON. Of the waterway, the replacement program, or for the entire waterway——

Mr. CEDERBERG. Well, let us take the replacement program.

Colonel DIXON. The estimated total cost, including completion of the replacement program as presently envisioned for the waterway, is $124,579,200.

Mr. CEDERBERG. It is going to carry 2.5 million tons for $124 million; is that right?

I assume that when the waterway is improved, and so forth, it will carry much larger tonnage?

Colonel DIXON. The immediately prospective tonnage set up in the estimate is that it will go up to as much as 5 million tons.

Mr. CEDERBERG. There are no tolls?

Colonel DIXON. There are no tolls, sir.

Mr. CEDERBERG. I assume that you understand what I am driving at, and I want to get that on the record. In other words, we are in this instance providing from solely Federal funds, on which we collect no tolls or receipts, an overall cost of approximately $124 million—the eventual cost, let us put it that way—to carry 2.5 million tons currently from Mobile to Birmingham, which of course will materially increase as time goes on.

Colonel DIXON. That is correct.

General CHORPENING. I would like to say this, that the tonnage is not entirely from Mobile to Birmingham, but is from Birmingham downstream as well.

Mr. CEDERBERG. That is going both ways?

General CHORPENING. Up and down; yes, sir.

RELATIONSHIP TO TENNESSEE-TOMBIGBEE PROJECT

Mr. CANNON. What relationship, if any, does this project have with the Tennessee-Tombigbee project which the committee over a period of several years has rejected a number of times?

General CHORPENING. The Tombigbee joins the Warrior River just above Demopolis Dam. Of course, the section from Mobile up to that point would be used jointly by the traffic that goes up the Warrior as well as any that would go up Tennessee-Tombigbee River Waterway, if it were built.

However, the justification for the replacement of these locks and dams is based entirely on tonnage that we estimate for the Warrior River to as far as Birmingham. None of the justification is connected with the prospective traffic that might go up the Tennessee-Tombigbee project.

Mr. CANNON. If the Tennessee-Tombigbee project were constructed this would be one link in it?

General CHORPENING. That portion from Mobile to the confluence of the Tombigbee with the Warrior River.

Mr. CANNON. However, at this time you have no such intention, there is nothing in your proposal here to again bring up the Tennessee-Tombigbee project?

General CHORPENING. No, sir.

Mr. CANNON. Are the 4 dams which are to be superseded by this project, Nos. 4, 5, 6, and 7, still in operation?

General CHORPENING. Yes; they are still in operation at this time.

Mr. CANNON. When this dam is completed, would they be of any further service?

General CHORPENING. No. They will have to be removed to clear the channel in the river.

Mr. CANNON. Will there be any salvage, from the demolition of those dams?

General CHORPENING. Very little, if any. They are very old structures; the crib type of dams that were built 50 or more years ago.

The equipment in them is old. There might be some value from them in the way of scrap iron, and if so, we will certainly dispose of it and get what we can out of it.

Mr. CANNON. Any small salvage that might be realized from the four dams would be more than consumed in the cost of removal?

General CHORPENING. I am sure that is correct, sir.

General STURGIS. May I emphasize there, that this particular project is an old project, constructed in the latter part of the last century, which is now in a state of obsolescence. The long-range proposal involves the replacement of that old project, alone, irrespective of the Tennessee-Tombigbee. It has nothing to do with the factors for or against the Tennessee-Tombigbee.

I have inspected the project myself; I have gone up and down the river, and the dams are an old type of low dam, built as General Chorpening has indicated, of timber cribs with stone fill. These cribs are now deteriorating very fast. The level of the water during flood periods will sometimes go up in the neighborhood of 40 to 50 feet over the top of the dam. Should a flood occur as has occurred in the past, and at that height, the water would probably take some of these dams out, which would result in tremendous interruption to traffic. The dams to be replaced by Demopolis are not quite in that shape, but they are approaching it, while others such as dam No. 9 are in worse shape.

General CHORPENING. Of course in recent years, with this Demopolis lock and dam being built, we have spent the very minimum on the maintenance of the structures, knowing that very soon they would be eliminated.

Mr. RABAUT. This Demopolis lock and dam in Alabama was started about 6 years ago, I believe; was it not?

Colonel DIXON. It was started, I believe, in fiscal year 1950.

Mr. RABAUT. In 1950.

General CHORPENING. Yes, sir.

Mr. RABAUT. I thought it was started farther back than that. It is also indicated here by the estimate sheets that the original cost, total cost of the project is around $20 million, and the figures requested here for fiscal 1955 is $3,500,000, which indicates that there will be a very small balance after that of $331,000, so that you are rapidly getting to the stage of completion.

General CHORPENING. That is correct.

Mr. RABAUT. The benefits of this dam are, as I recall, from the past, great aids to navigation. The old dams were short, and they had to break up the tow, and this dam has a length of 600 feet, and the width of some 110 feet for the lock.

General CHORPENING. The lock chamber, sir.

Mr. RABAUT. The lock chamber, yes.

And that is very beneficial not only to navigation, but also for the defense effort for handling of materials on that river.

General CHORPENING. For the national welfare, and the economic development of that region.

Mr. RABAUT. I am very well pleased with it.

General CHORPENING. I would like to mention we are going to close the river in August of this year, and the lock we expect to have in operation by September of this year.

Mr. RABAUT. The river will be closed at about the middle of the summer.

General CHORPENING. Yes, sir.

Mr. RABAUT. Is that the best season of the year to close it?

General CHORPENING. Yes, sir.

Mr. RILEY. General, I believe you told us there are no tolls charged on the waterways and locks operated by the Army Engineers; is that correct?

General CHORPENING. That is correct.

OPERATING EXPENSES

Mr. RILEY. You have to bear the expense of maintaining the locks as well as the operation?

General CHORPENING. That is correct, sir.

Mr. RILEY. Would there be any savings in maintenance on the four obsolete locks, because of the elimination here, by this larger construction?

General CHORPENING. Very definitely, that is taken into consideration in our economic study, by which we come up with the benefit-to-cost ratio of 1.36 to 1.

Mr. RILEY. There is a considerable saving?

General CHORPENING. A very considerable saving, yes.

Mr. RILEY. Not only that, but you would have a saving in time and make available to transportation a greater volume of water traffic over this particular route?

General CHORPENING. Yes, sir.

Mr. RILEY. Has any consideration ever been given to charging a modest toll to take care of the operating expenses of the waterways?

General CHORPENING. That has been given a lot of consideration to that by many people I am sure. Probably through the decades, there has been consideration given in connection with the discussions before the Public Works Committees on this matter. However, traditionally, ever since the initiation of this waterway, and the development of the waterways of the Nation, it has been considered to be in the interest of the national welfare to have the waterways of the Nation toll-free.

Mr. RILEY. It occurs to me that the Federal Government makes considerable appropriation for the building of highways throughout the Nation, but they also charge a tax on the gasoline that propels the vehicles in order to amortize, to some extent, the expense that goes into building them. I am just wondering if we are not making exception to some extent not to have at least a moderate toll to take care of the operation and maintenance expenses of these waterways. What would be the reaction of the engineers to such a proposal? Would you care to comment on that?

General CHORPENING. Actually we are operating and carrying out, in our construction program what, up to this time, has evidently been the desire of the Congress in these matters.

General STURGIS. Of course, that is a very vital question before the country, as I said in my opening remarks, Mr. Riley. There are new philosophies, and new looks are being taken at all of the questions in the field of natural resources. I have no doubt that question, among others, will be examined by the Hoover Commission, the task force which is looking into the question of Federal functions.

But there is also a national defense aspect to it, which certainly

worked out in the last war, and which we may see no doubt as a continuing factor in any coming war. For example, in connection with Mr. Rabaut's question, this particular waterway will be one that is not subject to bombing as the northern waterways carrying fuel and iron ore are. In other words, the project here, in this case, would be less likely to be bombed by an enemy.

It is true, that this waterway would be subject to, as far as iron ore and other supplies are concerned, hostile submarine action, but if the Navy happens to be successful in its hunter-killer type of operation, as far as such hostile submarines are concerned, then this waterway would be able to transport the iron ore, whereas other waterways to the north might be subject to attack.

I do not want in any way by my statement to tend to controvert the advantages of the other waterways, but all through the existence of the world, the question of survival has been usually based on the flexibility of man. He survives because of the flexibility of his nature, and, so in defense, our program must be a flexible defense, so that if we are hit in one place we can use another reserve to continue to exist.

The tremendous advantages of waterways, I do not think has ever been fully taken advantage of, even during World War II. This represents, therefore, a tremendous resource which we can resort to in carrying loads of materials, and supplement the capacity of the railroads to a greater extent than has ever been used.

Mr. RILEY. I realize fully the importance of the waterways, and I do not want anything I say to be indicative that I am not in favor of their development and their maintenance. As I understand, something like 20 percent of all the bulk freight transported in this country is by waterways. And of course that is a very important part of our transportation system. But there are any number of privately owned and privately operated plants that benefit up and down the inland waterways, and since they realize a profit from that operation, beyond any doubt, it occurs to me that a modest toll charge for their operation and maintenance, not for the construction, would be in line. And as you indicate, some study will no doubt be given to this by the Hoover Commission, which probably will come up with some recommendation. I hope they will look into the matter and make a recommendation on it.

General STURGIS. May I say in that respect, that water resources task force of the Hoover Commission has maintained a very close contact with the Corps of Engineers, and we are working very closely with Mr. Currans' section in that organization. I have also been called to appear before Admiral Morreel personally on that matter, and I can assure you we are working very closely with the representatives of that Commission in furnishing factual data.

Mr. RABAUT. General, you brought out the fact of the protection to the area in the matter of national defense during time of war. But the ships come through the ocean and of 5 ships coming up from Venezuela during the war, 5 or 6, they lost 3 of them, and they discontinued the service of bringing ore up from Venezuela.

General STURGIS. Yes. I think I mentioned that my statement was based on the assumption that the hunter-killer type of operation is successful. With the incursion of the enemy into Greenland or Alaska, the bases that exist in those lands could be used for bombing operations which would more likely find ready targets to the north than to the south.

ST. LAWRENCE RIVER PROJECT

Mr. RABAUT. Do you include the St. Lawrence River in that?

General STURGIS. The St. Lawrence River project has great advantage. It offers an alternative to the Sault Locks.

Mr. RABAUT. Yes.

General STURGIS. It does add flexibility, which I believe is an inherent need. As to this particular waterway, it would not be very vulnerable from submarine warfare and it does have an advantage, based on the assumption that there is an incursion into the north.

Mr. RABAUT. There are three members of this committee who are very partial to the St. Lawrence waterway.

General STURGIS. I certainly am most strongly for the St. Lawrence project. That is based on the fact that it is a very flexible proposition to have an outlet, as well as the economic advantage it offers as an alternative to the Sault Locks.

Mr. CEDERBERG. I do not want what I have said by any means to be construed that I am in any way opposed to these particular navigation projects, because I am one who believes that what is in the best interests of the people of this Alabama area, or the Mississippi area is also of benefit to the people up in our area. I only want to get some of these statistics in the record, so that the people from this area, who, for some reason have not been able to see the other areas, might also be a little flexible. You know, it is not necessarily enough to be flexible in providing the waterways, to serve the areas in which we are vitally interested, but we must be flexible in our thinking, so far as the entire country is concerned.

General STURGIS. That is correct.

Mr. CEDERBERG. I am in favor of this particular project itself; I think it is a good project; I just want the record to show the figures.

WARRIOR LOCK AND DAM, ALA.

No construction funds available.

Statement of average annual benefits

Navigation:	
Elimination of the annual charges on the capital investment required for a replacement-in-kind of the existing structures, which will have reached the end of their economic life	$89,000
Elimination of channel maintenance costs from lock No. 7 to Tuscaloosa lock	154,000
Elimination of operation and maintenance costs of locks Nos. 8 and 9	63,000
Savings to water carriers from reduction in lockage and travel time	1,012,000
Total annual benefits	1,318,000
Average annual charges	849,000

Data on continuing contracts	*Estimated contract earnings*
Continuing contracts in force	None
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955:	
Guide walls and lock—piling	$1,328,000
Lock operating equipment	$1,166,000

Mr. DAVIS. The next installation is the Warrior Lock and Dam, Alabama, which I believe is one of the 10 projects you listed as being either new or a resumption of work, in the field of navigation.

General CHORPENING. That is correct, sir.

Mr. DAVIS. I notice the total estimated cost of this project is $19,629,000. The appropriation to date has been $133,000, which indicates that it is for planning, and we have before us a request for $2 million for the 1955 fiscal year.

What has been accomplished in the field of planning, and what do you propose to do in the use of the $2 million requested here, General?

General CHORPENING. At the present time the general design memorandum for this project is completed, and the preparation of the detailed plans and specifications for the locks are about 55 percent completed. For the access road, they are approximately 40 percent complete. With the funds that we now have available in this fiscal year, all of those plans will be substantially completed by the end of this fiscal year.

Our plans are sufficiently advanced to where we have a firm cost estimate, as firm as can be had prior to actually going into construction on the project.

SECTION 6 OF THE 1909 ACT

Mr. DAVIS. I have before me a planning report, which purports to be up to date, as of this month, which indicates that the authorization relied upon dates back to 1909. What has been done in the way of bringing the plans of the corps up to date, or what has been done about getting current information to the legislative committee with respect to this proposal?

General CHORPENING. Mr. Chairman, under the provisions of section 6 of the 1909 act, which might well be inserted in the record.

(The matter referred to follows:)

EXTRACT FROM 1909 RIVER AND HARBOR ACT

SEC. 6. That section 4 of the River and Harbor Act, approved July fifth, eighteen hundred and eighty-four, be, and is hereby, amended and reenacted so as to read as follows:

"SEC. 4. That no tolls or operating charges whatever shall be levied upon or collected from any vessel, dredge, or other watercraft for passing through any lock, canal, canalized river, or other work for the use and benefit of navigation, now belonging to the United States or that may hereafter acquired or constructed; and for the purpose of preserving and continuing the use and navigation of said canals and other public works without interruption, the Secretary of War, upon the recommendation of the Chief of Engineers, United States Army, is hereby authorized to draw his warrant or requisition, from time to time, upon the Secretary of the Treasury to pay the actual expenses of operating, maintaining, and keeping said works in repair, which warrants or requisitions shall be paid by the Secretary of the Treasury out of any money in the Treasury not otherwise appropriated: *Provided*, That whenever, in the judgment of the Secretary of War, the condition of any of the aforesaid works is such that its entire reconstruction is absolutely essential to its efficient and economical maintenance and operation as herein provided for, the reconstruction thereof may include such modifications in plan and location as may be necessary to provide adequate facilities for existing navigation: *Provided further*, That the modifications are necessary to make the reconstructed work conform to similar works previously authorized by Congress and forming a part of the same improvement, and that such modifications shall be considered and approved by the Board of Engineers for Rivers and Harbors and be recommended by the Chief of Engineers before the work of reconstruction is commenced: *Provided further, also*, That an itemized statement of said expenses

shall accompany the annual report of the Chief of Engineers: *And provided further*, That nothing herein contained shall be held to apply to the Panama Canal."

General CHORPENING. This act says, in section 6—

that whenever, in the judgment of the Secretary of War—now the Secretary of the Army—the condition of any of the aforesaid works is such that its entire reconstruction is absolutely essential to its efficient and economical maintenance and operation as herein provided for, the reconstruction thereof may include such modifications in plan and location as may be necessary to provide adequate facilities for existing navigation: *Provided further*, That the modifications are necessary to make the reconstructed work conform to similar works previously authorized by Congress, and forming a part of the same improvement, and that such modification shall be considered and approved by the Board or Engineers for Rivers and Harbors and be recommended by the Chief of Engineers before the work of reconstruction is commenced.

All these provisions have been complied with, and this construction is in accordance with that proceeding.

Mr. DAVIS. While the authorization dates back to 1909, the planning with respect to the particular work contemplated here and the decision with respect to the replacement of the existing facilities is much more recent than that.

Colonel DIXON. We can give you the exact dates about those.

General CHORPENING. The dates that the Secretary of the Army did approve this and when it was acted upon by the Board.

Mr. DAVIS. I think it would be well to supply that.

Colonel DIXON. The Board of Engineers for Rivers and Harbors and the Secretary of the Army approved this replacement project in June and August of 1952, respectively.

Mr. DAVIS. Have the legislative committees of the House and the Senate been kept up to date on information with respect to this plan?

General CHORPENING. No. Specific mention has not been made to the legislative committees because under the provisions of the act, as cited, that action was not required. I will mention this, however, and it will be cleared up later in these hearings in connection with another project, that in the past year, when consideration was given to the application of this act to a project, the Chief of Engineers, due to the peculiar circumstances surrounding that waterway, did not feel that the act gave him authority to go ahead without going back to the committee. It was done in that case, and the committees of both Houses, the House and the Senate, considered it, heard testimony, and had a letter forwarded stating that, in their opinion, what we proposed to do came within the provisions of the 1909 act.

To that extent, the legislative committees very recently have been made aware of this provision, and the manner in which we have been using it in the Corps of Engineers.

General STURGIS. May I say, Mr. Chairman, that I have been emphasizing all during this year the importance of being on the safe side, as far as taking advantage of any new authority that we have to change the nature of a project or the basic costs. We have been engaged in making it a practice to come back to the Congress, and we want to be sure that you understand that is the plan we follow.

Mr. DAVIS. It appears that there is something like 17 existing locks on the Warrior River at the present time.

General CHORPENING. There were 17, sir.

Mr. DAVIS. Is this a part of completing a program of replacing all of those 17 locks?

General CHORPENING. That is correct.

Mr. DAVIS. You would then end up with a total of how many, to replace the 17?

Colonel DIXON. I have that information here. The waterway will consist of the Demopolis lock and dam, the Warrior lock and dam, the Jackson lock and dam, lock and dam 13, lock and dam 17, and the Tuscaloosa lock and dam.

Mr. DAVIS. That is six.

General CHORPENING. Yes, sir.

Mr. DAVIS. We have to consider this a new project in connection with the other five?

General CHORPENING. That is correct, of which the Tuscaloosa Dam has been built and has been in operation for some years. The Demopolis Dam, the one on which we are justifying a request, will be completed shortly. And this one, the one under consideration now, is the third of the series of six, that will include the modernization of the waterway.

Mr. DAVIS. What is the contemplation with respect to the Jackson, and locks 13 and 17?

General CHORPENING. The next one that we would recommend construction, after this, is the Jackson lock and dam, which is the replacement for the locks and dams, 1 and 2——

Colonel DIXON. 1, 2, and 3, sir.

General STURGIS. I might say this is a regular obsolescence program, similar to that being proposed on the Ohio River. In other words, we do not plan a piecemeal program, but it is all basically a part of a general replacement program, and therefore all construction is carried on with relation to each of the others.

Mr. DAVIS. When we are talking about justification of these individual locks and dams, it is quite hard to tie them down to figures, without having in mind the structures in the entire system; is it not?

General CHORPENING. In our justification for replacement, in each case, we consider only that stretch of the river that is covered by the structure under consideration. In other words, we eliminate maintenance and operation on 3 or 4 structures and reduce it to 1, and then we have shortened the time of the travel on the waterway very considerably, which again reflects itself in definite benefits. We have also adapted the facility to the type of traffic that is presently using or will soon use that waterway.

TRAFFIC TONNAGES

Mr. DAVIS. For the record, at this point will you insert the traffic tonnages of this particular navigable waterway for the most recent 5 years that you have it available, and give us, also, a breakdown of the tonnages of the major items that are affected here for the last year available.

Colonel DIXON. Yes, sir; we shall be glad to do that.

(The matters referred to follow:)

Commerce, Black Warrior, Warrior, and Tombigbee Rivers, calendar year 1952

Commodity	Tons
Logs, including rafted logs	113, 595
Pulpwood	94, 333
Bituminous coal	236, 005
Motor fuel and gasoline	175, 666
Crude petroleum	237, 494
Clays and earths	127, 871
Limestone	779, 838
Sand and gravel	138, 530
Iron ore	212, 029
Rolled and finished steel mill products	242, 975
All other	195, 418
Total	2, 553, 754

Total ton-miles, 500,743,000.
Average miles per ton, 196.

Commercial statistics for Black Warrior, Warrior, and Tombigbee Rivers system

Calendar year	Short tons
1952	2, 553, 754
1951	2, 712, 890
1950	2, 602, 623
1949	2, 089, 594
1948	2, 058, 504
Total	12, 117, 366

Mr. DAVIS. What do you anticipate in the future with respect to the freight traffic on this waterway?

General CHORPENING. As stated in connection with the Demopolis lock and dam, we estimate that the same figures that we utilized there would apply similarly here.

This lock and dam will be the one immediately upstream from the Demopolis lock and dam. So, essentially, all the traffic either in existence or contemplated that goes through Demopolis will go through the Warrior lock.

Mr. DAVIS. In this general area in the past we have had foundation troubles when we have tried to build some of these structures.

What is the situation at the proposed site of the Warrior lock and dam?

General CHORPENING. We have very thoroughly investigated the foundation conditions there. We know what we have encountered at Demopolis, which is not far away, and we feel that we will encounter no difficulties that we do not at this time foresee.

We have reflected what we know about the foundation and the way we are going to have to treat that foundation in our cost estimates.

Colonel DIXON. In that connection, sir, where we do run into foundation difficulties, it is usually where we have a discontinuity and change of foundation conditions.

In this case the foundation is uniform for a great depth; it is compacted silt material to a great depth and it is uniform. We anticipate no difficulty that we cannot foresee.

BENEFIT-TO-COST RATIO

Mr. DAVIS. When we are talking about this 1.55 benefit-to-cost ratio for this project, is that assuming the construction of the Jackson lock and dam downstream from it, for which planning funds are requested in this 1955 fiscal year?

General CHORPENING. No, sir; that is based on the consideration of the locks and dams to be replaced and the savings to transportation in the stretch of river affected by the Warrior lock and dam.

I would like to say one more thing in connection with the earlier questioning of the chairman:

At Demopolis, where we have stated we did have some difficulty with the cofferdam, that was not so much a matter of encountering bad foundation conditions as it was the fact that we had a contractor in there who just did not understand how to handle heavy construction.

I do not anticipate any untoward difficulties in connection with the construction of this lock and dam. I would not be so brash as to say that we will never have any difficulties, because when you open up foundations, you do encounter sometimes situations that you just could not anticipate but, as we see it—and we have gone into it very thoroughly—we should not encounter them here.

Mr. HAND. Do you have a chart with you, General, which would show the six different projects involved in the overall system here?

General CHORPENING. I think we do.

Mr. HAND. For the record, the answer is "Yes," and I am looking at the chart at this time.

This entire system of 6 different projects—I am not talking about the Warrior lock which is only 1 of them, but 6—they are to improve navigation from where to where? From what point to what point?

Colonel DIXON. It will improve navigation conditions from where the Demopolis takes over to the completed Tuscaloosa Dam.

Mr. HAND. Colonel, taking the whole system, including all six projects, when they are completed, where will that constitute the improvement? From where to where?

Colonel DIXON. From Mobile Bay on up to Birmingham.

Mr. HAND. From Mobile Bay to Birmingham?

Colonel DIXON. That is right.

Mr. HAND. So that Warrior lock and dam is completely interlocked with Demopolis and completely interlocked with four other projects in order to make the improvement which is regarded from Mobile Bay to Birmingham?

Colonel DIXON. That is correct, sir. Economically, though, each unit will contain its own benefits.

Mr. HAND. Each unit eliminates one or more obsolete dams and consists of an improvement of its own in a section of the waterway?

Colonel DIXON. That is correct.

Mr. HAND. Nevertheless, as we look at this project alone, which eliminates only 1 lock out of the whole 7, that is not a very major part of the Warrior project; is it?

Colonel DIXON. Of course, the lock is larger and you do not have to break up your tows. You can take them through more rapidly on that particular section, and we have found under the old system it might take 2½ hours per lockage, and at this proposed lock we expect it to be handled in a matter of 20 minutes. That is a material savings in time.

Mr. HAND. The savings, of course, will be increased as the entire 17 old locks are substituted for?

Colonel DIXON. Yes, sir.

Mr. HAND. When we are talking about the total tonnage on this waterway, we of course are not talking about this piece or that piece;

we are talking about the entire river from Mobile to Birmingham; are we not?

Colonel DIXON. Yes, sir.

Mr. HAND. The total project is to improve navigation from Mobile to Birmingham?

Colonel DIXON. That is correct.

Mr. HAND. Your answer, then, to Mr. Cederberg a while ago about the total cost of some $122 million is about the picture there?

Colonel DIXON. That is right.

Mr. HAND. All of that money is being expended for the purpose of improving traffic for the handling of about 2.5 million tons?

Colonel DIXON. Yes, sir, and a prospective traffic of about 5 million tons.

General CHORPENING. I think it should be made clear in the total of $122 million, we have already built the Tuscaloosa lock and dam; we have essentially completed Demopolis.

So, I would estimate that about $21 million has already been expended for those 2 replacement projects.

JACKSON LOCK AND DAM, ALA.

Mr. HAND. General, I think I understood you to say that you would recommend next the Jackson project after this construction; is that right?

General CHORPENING. That is correct, sir.

Mr. HAND. When you say "After this," do you mean after this construction is completed?

General CHORPENING. At such time, sir, as the budgetary and other limitations would permit us to proceed. We feel that the Jackson lock and dam should be initiated at a very early date.

Mr. HAND. The Jackson lock and dam which is proposed downstream from this present lock; is it not?

General CHORPENING. That is correct. That is below Demopolis in the stretch of river from Mobile to the confluence of the Tombigbee.

Mr. HAND. Approximately how far is that?

Colonel DIXON. Jackson is a little over 100 miles from Mobile.

Mr. HAND. What is the reason, General, from an engineering standpoint, or otherwise, for building the Demopolis lock and dam in the middle and then you contemplate the Warrior lock and dam which is upstream, and Jackson then is downstream a considerable distance?

General CHORPENING. It is a matter of the state of obsolescence of the structures that are in the river at this time.

Mr. HAND. All of them have locks and dams?

General CHORPENING. Yes, sir; all have locks and dams.

Colonel DIXON. I have some pictures here, if you would care to look through them, showing the type of locks and the condition of the locks. We are replacing both locks 8 and 9 with Warrior. They are in serious condition.

Mr. HAND. Is that on the Warrior River?

Colonel DIXON. Yes, sir.

General STURGIS. Those photographs, Mr. Hand, are of the particular locks that I was speaking about a while ago when I stated the condition of the locks 8 and 9.

The others in the Demopolis pool are not quite so bad as that.

Mr. HAND. Just to try to get myself straight and clear on this overall project, if we assume that that is going to be built, there still would remain two more projects?

General CHORPENING. That is correct, sir.

Mr. HAND. Would you identify them and say whether they are upstream or downstream?

General CHORPENING. They are upstream above the Warrior lock and dam.

Mr. HAND. How are they identified on this map?

Colonel DIXON. There are 2 locks and dams; 1 is lock 13, and 1 is lock 17.

Mr. HAND. Lock 17 is very close to Birmingham; is it not?

Colonel DIXON. That is right.

Mr. HAND. Do you have any figures available as to the estimated cost of locks 13 and 17? I am trying to get clear the overall project in mind.

General CHORPENING. They are included in the previous figure given to Mr. Cederberg of $122 million.

Mr. HAND. I am now trying to separate them.

General CHORPENING. We can give you the breakdown on our present estimated costs which, as you know, will not be too firm until we have gone into more definite planning.

ESTIMATED COSTS

Mr. HAND. If you can, Colonel, give me the estimated cost of Jackson lock and dam and the estimated cost of the lock 17 lock and dam, as of this time?

Colonel DIXON. The estimated cost of Jackson is $28,546,000; lock and dam 13, which is planned to replace locks 13, 14, 15, and 16, will cost about $28 million.

The estimated cost of lock and dam 17 is $12,500,000.

Mr. HAND. The 2 of the remaining 3 are very much larger projects than the present one, the Warrier lock and dam, are they not?

Colonel DIXON. Yes, sir. They are both of a high lift. There has been consideration of putting power at those dams but the present thinking is that we will not recommend for authorization those particular structures at this time for hydroelectric power.

Mr. HAND. Yes; and traffic is moving on this entire river system now; is it not?

General CHORPENING. Yes, sir.

Mr. HAND. The benefits to be obtained by this large expenditure is, first, because the present locks will acquire an additional degree of obsolescence every year and will either require extra repairs or some rebuilding?

Colonel DIXON. Yes, sir.

Mr. HAND. Also, that the improved locks would facilitate the movement of traffic on the river?

Colonel DIXON. That is correct.

Mr. HAND. The river is presently navigable and traffic is moving from Mobile Bay to Birmingham, Ala.?

Colonel DIXON. That is correct.

General STURGIS. Might I say, Mr. Hand, in answer to your question in regard to the costs of the locks, the farther you go upstream, the steeper the slope of the river, and the dam has to be higher.

COMPLETION OF PLANS

Mr. HAND. You do not expect to finish this construction until some time in 1957?

General CHORPENING. That is correct for the Warrior lock and dam.

Mr. HAND. No money has been spent, except for preliminary planning, on this construction?

General CHORPENING. There is no construction as of this time. This is the first request before the Congress for construction funds on this project.

Mr. HAND. Although, it has been authorized since 1909? I mean, the general construction on the stream was authorized at that time?

General CHORPENING. Actually, as earlier testimony indicated, 1952 is when it was authorized by the Secretary of the Army.

Mr. HAND. And that was pursuant to the act of 1909?

General CHORPENING. Yes, sir.

General STURGIS. Might I say this, sir, in connection with the first part of your question: with regard to why we are putting in for money for these locks, if they were all constructed at the present time, of course, were that possible, and without fund limitations, there would be a large increase in traffic, we feel, because that has been our experience. When you modernize any section of a stream, increased use comes about.

This really is a priority approach to the matter, and those increases in use are due to 2 major factors: 1 the elimination of a number of the locks by decreasing the number of dams and greatly increasing the capacity of the lock chambers.

Mr. HAND. Your planning is not yet complete, is it, General?

General CHORPENING. The planning, as I stated, is very actively underway, and we expect by the end of this fiscal year that we will have essentially completed the plans and specifications on the locks and on the access road, which are the items which we would proceed with.

Mr. HAND. You are referring to the end of this fiscal year, 1954?

General CHORPENING. That is correct, Mr. Hand.

Mr. HAND. By the beginning of the fiscal year 1955, you would expect your plans to be complete?

General CHORPENING. Yes, sir.

Mr. HAND. You contemplate the expenditure of $2 million?

General CHORPENING. Yes, sir.

Mr. HAND. Of which the construction itself, or the beginning of the construction on the lock, is for the great bulk of that fund in the amount of about $1.6 million?

General CHORPENING. That is correct.

Mr. HAND. Do you think you can spend that much money during fiscal year 1955 in view of the fact that the plans are not yet complete?

General CHORPENING. I believe we can.

Of course, there is the other matter that this will be for a continuing contract for very considerably more, and we should probably have available at the time we advertise a sufficient amount of funds so that the prospective bidders can take that into account in their bidding.

If you advertise on too much of a shoestring, it is bound to have an impact in connection with the bidding.

Mr. HAND. Some of the costs, say, $100,000, would be for access acquisition of land for the actual site of the construction of the lock?

General CHORPENING. Yes, sir.

Mr. HAND. I do not suppose that estimate is firm?

General CHORPENING. Not as of now, but reasonably so. Of course, when you go into the matter of buying land, many things enter into it that may serve to increase the costs; we may encounter condemnation proceedings.

Mr. HAND. As in other navigation projects under the law, you are requiring no local contributions; is that correct?

General CHORPENING. That is correct.

DEPTH OF WATERWAY

Mr. CEDERBERG. How deep is this waterway?

Colonel DIXON. Nine feet, sir.

Mr. CEDERBERG. How deep was it before it was authorized back in the early 1900's? Do you have any idea?

In other words, this would not have been navigable except for the manmade works that have been placed on it in the form of locks and dams to maintain the height at 9 feet so that you could have barge travel on it?

General CHORPENING. To a very slight extent it would have been navigable, but navigation would have been most hazardous.

Mr. CEDERBERG. In other words, the ore that comes from, say, South America, must be unloaded at Mobile into a barge and taken up to Birmingham by barge traffic?

General CHORPENING. Yes, sir.

Mr. CEDERBERG. All of the works that have gone into this particular area, including $124 million, has been to maintain a 9-foot depth so that this barge traffic could go from Mobile to Birmingham?

General CHORPENING. Yes, sir. The costs already incurred plus future construction will total $124 million.

Mr. RABAUT. This is in the same category as the Demopolis lock and dam so far as the necessity for it is concerned?

General CHORPENING. Yes, sir.

Mr. RILEY. General, I note that the size of these 2 locks and dams is 110 by 600 feet.

Is that the standard size being built today?

General CHORPENING. Yes, sir. However, in some waterways where the traffic is much greater we are proposing and are building locks as great as 1,200 feet.

We have one of that size near St. Louis on the Mississippi River, and those that we propose on the Ohio would be longer ones, but on this waterway we have standardized on the 110 feet by 600 dimensions.

Mr. RILEY. Is the depth of 9 feet an average depth for an inland waterway?

General CHORPENING. That is an average depth; yes, sir. Some are authorized greater depths but, generally, I would say that is the standard depth. That is the standard depth on the inland waterway system for instance.

Mr. RILEY. That is the standard operational depth on most of the inland waterways that have this barge traffic; is that right?

General CHORPENING. Yes, sir.

ARKANSAS RIVER AND TRIBUTARIES, ARKANSAS AND OKLAHOMA
(EMERGENCY BANK STABILIZATION AND CHANNEL RECTIFICATION)

Date	Unobligated balance	Unexpended balance
June 30, 1953	$544,010	$917,115
Dec. 31, 1953	2,283,095	3,066,192
June 30, 1954 (estimated)	3,300	414,800

Statement of average annual benefits

The present program of emergency bank stabilization is limited to critical localities where project levees, bridge and utility crossings, and other improvements are threatened with damage or destruction by caving banks. The benefits to be realized from the work underway at each location are real and substantial but are very difficult to evaluate in monetary terms.

Data on continuing contracts

	Estimated contract earnings
Continuing contracts in force: Construction of revetment and dikes, mile 368.5 to 365.5 and 365.1 to 364.6	$1,433,400
Proposed in fiscal year 1954 but not yet in force: Construction of upstream control structure at Holla Bend Cutoff	892,100
Proposed in fiscal year 1955:	
Construction of revetment and dikes, mile 364.6 to 362.0	2,293,100
Construction of revetment at McLean Bottom	964,000

Mr. HAND. The next project is found on page 51 of the justifications, and it is the Arkansas River and tributaries.

May I summarize for the record, briefly, that the total estimated Federal cost at this time for the emergency work is $25,302,100; total appropriations through June of 1953 were $10,235,000; amount requested for fiscal year 1955—the estimate currently before us—is $3 million, and the estimated balance to complete after that is $8,467,000.

This cannot be called, General, this entire project, definitely and exclusively a navigation project; can it?

General CHORPENING. No, sir. The authorization under which this work is being done is a navigation authorization of 1946. That authorization requires as a part of the navigation project the stabilization of the banks of the Arkansas River.

In the intervening years definite emergent conditions have arisen on the Arkansas River and the work that is involved here is to correct those emergent conditions. However, the work is being so constructed, as to be a component part of the navigation project—if and when such project is directed by the Congress to proceed.

Mr. HAND. In other words, it is not a navigation project now?

General CHORPENING. That is correct, sir.

Mr. HAND. What is it?

General CHORPENING. It is an emergency project for the stabilization of the banks of the Arkansas River, being done as a part of and under the authorization of the navigation project.

Mr. HAND. What is the purpose of stabilizing the banks? Is it for flood control?

General CHORPENING. Flood control, prevention of erosion of the banks, which if allowed to go ahead would require the setting back of levees—either the setting back of levees or the destruction of them—

and the attendant destruction of thousands of acres of farmland and the flooding of other land. There are many other works such as railroad and highway bridge crossings, which have become endangered by the eroding banks of the Arkansas. Also, pipeline crossings for the delivery of natural gas, and other utilities are involved.

Mr. HAND. Then, is it correct for me to say that this is presently primarily a flood-control project, which in the future will have value to navigation if navigation, of course, is undertaken in the present program of emergency bank stabilization; is that correct?

General CHORPENING. That is correct, sir.

ESTIMATED COST OF EMERGENCY WORK

Mr. HAND. In last year's hearings on page 324 (pt. 1) the chairman of this subcommittee was disturbed by the total estimated cost of the emergency work when it was given as $18,852,000. He then indicated that that was a large increase in the estimated cost since the year before, and I will ask you to explain the reason for the total estimated cost of $25,302,100 in the present estimate.

Will you comment on that, General?

General CHORPENING. Yes, sir; the record for last year and also the record of the previous year in connection with the fiscal year 1953 hearings, indicates, as I pointed out, that this is an emergency project, and that it is extremely difficult from year to year to determine where other emergent conditions may happen. On that account, as we proceed, there are developing on the river other places where it is considered that work should be done to protect the levees or highways or railway bridges, or whatever the facilities are.

As I pointed out, the increase is due to other emergency conditions which have developed.

Going back—I think it was 2 or 3 years ago—we at that time discussed specific locations that required work, and we did give to the Congress an estimated cost of those specific locations.

In checking the record, I find that we estimated for those specific locations—that the cost would be $12,766,000. We now find, having done considerable work and completed some of them, that the actual cost is going to be in the neighborhood of $350,000 less than we estimated it would be at that time.

The point I am making is that the increase in the estimate is not on specific items that we previously estimated, but in the increased number of emergent conditions that we find on the river.

Mr. HAND. New locations have been added which have been determined to be of an emergency nature?

General CHORPENING. Yes, sir.

Mr. HAND. Suppose you tell us in some detail what locations you are now contemplating in this program?

Colonel DIXON. The request of $3 million that is now before you will be applied as follows:

WILSON ROCK TO FORT SMITH REACH

In the Wilson Rock to Fort Smith Reach—I think the committee recalls that particular reach—it is a reach where we proposed to work from hard point to hard point to stabilize the river.

Mr. HAND. This is the work between those two hard points?

Colonel DIXON. Yes, sir; this is the complete stabilization in that reach, and it is as complete as is necessary.

In that particular reach, we are applying $1.1 million. To date on that reach, we have had appropriated $3,461,000. The total cost of the reach is estimated to be about $6,800,000.

Also, under the $3 million budget estimate we have two specific locations in the Mill Creek to Morrison Bluff Reach.

Mr. HAND. Before you leave Wilson Rock, I wonder if it would be helpful to state for the record the approximate length of the work of stabilization? Is it on both banks or one?

Colonel DIXON. It is on both banks, and although this cannot be shown in the record, I have a chart here which I think is somewhat plainer than some of the others which I have had, and it shows what is to be placed in this reach, between Wilson Rock and Fort Smith.

The green indicates the work we are doing with our 1954 money, and the red shows what we propose to do with this $1.1 million. The total reach under consideration is 14.5 miles long, approximately.

Mr. HAND. Will the amount requested this year complete it or not?

Colonel DIXON. No, sir; it will not. We will need a balance of $2,239,000.

Mr. HAND. When do you estimate that it may be completed, assuming the appropriation funds are funded, and in orderly fashion?

Colonel DIXON. It will take appropriations probably for 2 more years, or for fiscal years 1956 and 1957.

Mr. HAND. In your particular stabilization work are you using the revetments and, if not, what other methods are you using?

I do not mean the revetments, but I mean the work that you have had quite a great deal of experience in dealing with.

General CHORPENING. We are using on the Arkansas River essentially the same methods that we have used on the Missouri River very successfully. That is, permeable dikes to force the river into the new channel, and the use of timber mats or rock revetment to hold the river in place once we have trained it there with the dikes.

Mr. HAND. You are not using the concrete mats?

General CHORPENING. No, sir; they are not required in rivers such as the Missouri and Arkansas, where the depths are much less, and the force is so much less than on the main stem of the Mississippi.

Mr. HAND. What is the approximate depth of the river at this point?

General CHORPENING. It varies quite considerably. Of course, I suppose there are places in the river where it would be as deep as 30 or 40 feet, but generally it is quite shallow.

Mr. HAND. How shallow?

General CHORPENING. Probably 6, 7, or 8 feet. It varies quite considerably and, of course, in low water—extremely low water—you probably could ford it at some locations in the upper reaches.

Colonel DIXON. In that connection, and to indicate the depth of this river if you wanted to make it navigable year-round you would have to put locks and dams on the river because it fluctuates so widely. Sometimes you can practically walk across the river at certain points.

General CHORPENING. It has the same status as many of our rivers, such as the Upper Mississippi and others, where before you build locks and dams there are places where it is shallow.

Mr. HAND. For the purpose of our present thinking we can disregard navigation; is that not so?

Colonel DIXON. Yes. There is navigation on the river, sir, but most of the tonnage—about 800,000 tons—is in the lower reaches below Little Rock.

Mr. HAND. I have interrupted you repeatedly, but I would like you to go on with your allocation of funds for the other reaches that you are proposing this year.

MILL CREEK MOUNTAIN TO MORRISON BLUFF REACH

Colonel DIXON. To continue on the second reach under consideration, which is in the major reach from Mill Creek Mountain to Morrison Bluff, we have a specific location at McLean Bottom, which is mile 298.7, to mile 296.1. We intend to apply $425,000 to this specific location. We have had zero allocation to date on it. The balance is $700,000 to complete the work. Stabilization will require about 12,000 feet of revetment along the right bank of the river.

In that connection, there were in this reach 4 specific locations which became quite critical where the distance to the levee was from 270 feet to 510 feet. The caving adjacent to this levee is about 90 feet a year even with below-normal flows. It is evident then that the levee can be breached at any time. I have a colored chart here showing the specific work we intend to do. I call the committee's attention to the nearness of the levee paralleling that revetment. If that revetment work is not done, we have the alternate solution of setting the levee back, which is not a very satisfactory solution, but a solution to which we sometimes have to resort.

By setting the levee back, you take lands out of cultivation and you run into the expense of setting the levee back.

It is not satisfactory. The ideal thing is to revet and hold your line.

Mr. HAND. Is all the detail which is given us now included within your projects form No. 2201 in this justification?

Colonel DIXON. Yes, sir. The money that is set up for a specific reach is indicated in the form PB–2, which is in the hands of the committee.

Mr. HAND. Suppose you proceed briefly, if you will, with the other reaches.

HOLLA BEND CUTOFF REACH

Colonel DIXON. The next one is Holla Bend Cutoff.

Mr. HAND. Did you give us the distances involved in the other reaches?

Colonel DIXON. I will, sir. It is 2.6 miles for McLean Bottom.

Mr. HAND. Suppose, Colonel, to save your time and ours, how many reaches are there contemplated now?

Colonel DIXON. There are six additional reaches, sir.

Mr. HAND. In addition to what you have covered; is that right?

Colonel DIXON. Yes; at 6 specific locations, a total of 8.

Mr. HAND. In the same manner in which you have been proceeding, will you insert the detailed information in the record for our later examination?

Colonel DIXON. Yes, sir; I shall be glad to.

(The matters referred to follow:)

Wilsons Rock to Fort Smith (mile 376.5 to mile 362.0)

Total estimated Federal cost of emergency item	$6,800,000
Allotment to date for construction	3,461,000
Budget request, fiscal year 1955	1,100,000
Balance to complete	2,239,000

JUSTIFICATION

The emergency work provides protection from destruction by caving banks of a rich agricultural area and major transportation arteries. In the Moffet Bottom area (mile 365.5 to mile 364.0) bank caving progressed approximately three-fourths of a mile during the 10-year period ending in 1952 and at present the bank is less than one-half mile from the highway. The town of Moffet and Moffet Bottom agricultural area are threatened. In the Bradens Bend reach (mile 375.0 to mile 369.0), the river is threatening to isolate several thousand acres of agricultural bottom by cutting across to the Poteau River approximately one-half mile away. Active bank caving in this reach has progressed approximately one-half mile in the 10-year period, 1942 to 1952.

The $1,100,000 requested for fiscal year 1955 is the minimum amount required to continue emergency construction now under way. In addition to that mentioned above, it is important that the considerable investment in work now in place be protected by continuation of the work, as these structures are now extremely vulnerable to damage from high flows.

McLean Bottom revetment (mile 298.7 to mile 296.1)

Total estimated Federal cost of emergency item	$1,125,000
Allotment to date for construction	0
Budget request, fiscal year 1955	425,000
Balance to complete	700,000

JUSTIFICATION

There are 4 locations along the McLean Bottom levee where the caving right bank has reached points from 270 to 510 feet from the levee. Recent studies of anticipated rates of caving indicate that, under average flow conditions, the levee could be breached at these locations within 2 to 4 years. The most serious of these locations is at approximately mile 297.6 where the bank is within 510 feet of the levee and has caved at a rate of 90 feet per year even though the flow of the river has been considerably below normal. Failure to impede the caving at mile 297.6 will endanger the project levee which protects 10,000 acres of agricultural land producing food and fiber crops valued at more than $1 million annually and will require construction in a few years of a setback levee at an estimated cost of $100,000.

With the $425,000 in the budget request for fiscal year 1955, 5,000 linear feet of revetment can be constructed at this location where the safety of the McLean Bottom project levee is most seriously endangered. Additional funds in the amount of $700,000 will be required after fiscal year 1955 to complete this emergency work.

Holla Bend cutoff (mile 251.0 to mile 241.0)

Total estimated Federal cost of emergency item	$2,110,900
Allotment to date for construction	1,363,800
Budget request, fiscal year 1955	550,000
Balance to complete	197,100

JUSTIFICATION

A continuation of work to construct upstream control structure to direct flow into the Holla Bend Cutoff and to insure proper development and operation of the cutoff. The completion of the Holla Bend Cutoff will relieve the continued need for levee setbacks along the right bank of the river loop and reduce the threat of destruction to locally owned levee along the left bank, which levee is now only 200 feet from the top of the bank with an indicated annual rate of caving of nearly 100 feet. The completion of the cutoff will insure the integrity of the State and county highway systems. The most critical location in the reach at the present time is where a severe attack has resulted in the loss of more than 2,000 feet of the Near Dardanelle project levee. At one point the bank is 210 feet

behind the former levee alinement and the caving has breached the State highway. Valuable and productive farmlands which produce food and fiber crops valued at $1,500,000 annually are protected by these levees.

The $550,000 requested for fiscal year 1955 is needed for orderly continuation of work to control the flows through the Holla Bend Cutoff.

Estes Place (mile 150.3 to mile 148.0)

Total estimated Federal cost of emergency item	$1,213,000
Allotment to date for construction	306,000
Budget request, fiscal year 1955	100,000
Balance to complete	807,000

JUSTIFICATION

The bank-protection works in the vicinity of Estes Place are required to insure the safety of the North Little Rock to Gillett (above Plum Bayou) project levee. The project levee protects more than one-half million acres of fine agricultural land as well as numerous communities, State and county highways, railroads, and other utilities. It is estimated that this protected area produces crops, food, and fiber valued at more than $50 million annually. At the critical point of bank caving at Estes Place the top of the bank in November 1953 was approximately 430 feet from the toe of the setback levee which at the time of its construction in 1944 was more than one-half mile from the river. A recent analysis of the anticipated rate of caving at this location indicates that, under average flow conditions, the levee would be breached in the fall of 1954 if bank-stabilization works are not constructed.

The initial phase of protective works estimated to cost $406,000 was initiated with fiscal year 1954 funds and the $100,000 requested for fiscal year 1955 is required to complete that initial phase, which is essential to the plans for relieving caving toward the left bank and the threat to the improved area behind the levee. Additional funds in the amount of $807,000 will be required after fiscal year 1955 to complete the emergency work at this location.

Warings Bend (mile 148.2 to mile 146.5)

Total estimated Federal cost of emergency item	$1,220,000
Allotment to date for construction	354,000
Budget request, fiscal year 1955	140,000
Balance to complete	726,000

JUSTIFICATION

The bank-protection works at Warings Bend are required to insure the safety of the Fourche Island to Pennington Bayou project levee. The project levee protects about 32,000 acres of agricultural land which includes a large Federal rehabilitation project and the Arkansas State Industrial School for Negroes. The estimated annual value of crops produced in the area protected by this levee is nearly $2 million. At the most critical point the top of the bank in November 1953 was approximately 310 feet from the toe of the levee. A recent analysis of the anticipated rate of caving indicates that under average flow conditions the levee would be breached in the fall of 1954 if bank-stabilization works are not constructed.

Construction of the initial phase of the protective works estimated to cost $494,000 was initiated with fiscal year 1954 funds and the $140,000 in the budget request for fiscal year 1955 will permit the completion of the initial phase of the bank protection works necessary to insure the safety of the Fourche Island to Pennington Bayou project levee. Additional funds in the amount of $726,000 will be required after fiscal year 1955 to complete the emergency work at Warings Bend.

New Gascony Dikes (right bank—mile 85)

Total estimated Federal cost of emergency item	$230,000
Allotment to date for construction	0
Budget request, fiscal year 1955	230,000
Balance to complete	0

JUSTIFICATION

The banks of the Arkansas River in the New Gascony area are composed of easily erodible materials, resulting in a constantly shifting channel. Bank protection works are required to protect the controlling south bank levee and to prevent development of a channel down the south bank. In addition to affording protection to the main south bank levee these dikes will afford protection to the south bank ends of six natural-gas submarine pipelines which cross the river in this area. The dikes will also prevent flanking of the recently constructed New Gascony dike system at Trulock by preventing development of a channel along the south bank in an area where the foreshore ranges to less than 1,000 feet. Development of a channel here would disrupt the present favorable river alinement. The south bank levee is part of a system affording protection to approximately 1,280,000 acres of highly productive farmlands, numerous municipalities, railroads, oil and gas fields, and other developments. The loss of production in these rich agricultural areas and disruption of the other important facilities would have a serious effect upon the economic activities of a large area in the central part of the United States. Also from a defense viewpoint, it is considered significant that the bridges, pipelines, and utility lines be protected to prevent the disruption of transportation of both fuel and people.

The cost of constructing pile dikes at this location is estimated at $230,000.

New Gascony Revetment (left bank–mile 84)

Total estimated Federal cost of emergency item	$275, 000
Allotment to date for construction	0
Budget request, fiscal year 1955	275, 000
Balance to complete	0

JUSTIFICATION

The banks of the Arkansas River in the New Gascony area are composed of easily erodible materials and heavy recession has been experienced at high stages. An indicated channel development between Madding and the recently completed New Gascony pile dikes system will, if allowed to progress unchecked, cause the north bank to cave and endanger the controlling levee for a distance of 3 miles. The levee in this locality is a part of the north bank levee system which affords protection to approximately 568,000 acres of highly productive farmlands, numerous highways and municipalities, and a railroad. Also endangered by the caving banks in this area are the north bank ends of six natural-gas submarine pipelines crossing at Madding. These pipelines furnish gas to the highly industrialized St. Louis area.

To halt the threatened channel change and prevent outflanking of the existing stabilization works, it is presently indicated that revetment estimated to cost $275,000 is required.

Brunsons Crossing Dikes (right bank—mile 76)

Total estimated Federal cost of emergency item	$180, 000
Allotment to date for construction	0
Budget request, fiscal year 1955	180, 000
Balance to complete	0

JUSTIFICATION

Active bank caving and misalinement due to meandering have been in progress for several years on both banks of the Arkansas River in this locality and the main south bank levee is presently being endangered by direct attack. The south bank levee is part of a system which protects 1,280,000 acres of highly productive farmlands, numerous municipalities, railroads, oil and gas fields, and other developments. In recent years the river in this locality has developed a shallow channel across the point just upstream from this location. Prior to this occurring, the bank below this point has experienced very little caving in recent years, and particularly in the past year because of the extreme low water. The present distance to the levee is approximately 1,250 feet. This development presents a threat to the south bank levee in that the attack of the river, at medium and high stages, is against a portion of the south bank composed of very sandy and easily erodible material. This material is similar to that in a reach just down-

stream where, during a flood, recession of the bank of 800 feet within a 10-day period was experienced. The proposed work will also prevent an indicated channel development along the south bank which, if permitted to continue, will allow the river to impinge at a very unfavorable angle on the Kings Bayou dikes, protecting the north bank levee. The loss of production in these rich agricultural areas and disruption of the other important facilities would have a tremendous effect upon the economic activities of a large area in the central part of the United States. Also, from a defense viewpoint, it is considered significant that the bridges, pipelines, and utility lines be protected to prevent the disruption of transportation of both fuel and people.

The cost of constructing pile dikes at this location is estimated at $180,000.

Mr. HAND. I notice in the justification several items for navigation by providing lock chambers, and so forth. That is contemplated in the future and we are not discussing that now in any way; is that correct?

Colonel DIXON. That is right; those structures are a part of the comprehensive overall navigation project for the Arkansas.

Mr. HAND. Generally speaking, what areas or what cities are to be benefited by this project, or what is essentially presently a flood-control project?

Colonel DIXON. Fort Smith and the town of Moffett will be specifically benefited by the work from Wilsons Rock to Fort Smith.

The other locations are not directly connected with major cities. You do have indirect connection with the city of Little Rock and with Pine Bluff. It is connected in this sense: that should a levee be breached on the lower river, Pine Bluff, for instance, would be flooded out. The other revetment is not, you might say, in the city front, or immediately at the city front, but they are related to the cities because this project protects a relatively extensive area of 1.5 million acres.

Mr. HAND. Has there been any recent history here of floods?

Colonel DIXON. Yes, sir; we have had experience that I know of in the lower reaches of the Arkansas River. By "lower," I mean below Pine Bluff. There have been a series of floods in that area.

In 1943 and 1945, I think there were serious floods down below Pine Bluff. There is quite an extensive record of floods on the Arkansas River.

General CHORPENING. In addition to the floods, sir, there is this continual erosion by the river of the banks quite similar to what some of the members of the committee saw on the Missouri last fall.

Mr. HAND. Can you insert in the record for the examination by the committee a fairly comprehensive statement of the area which is directly protected from flooding by this proposed work, and the cities and areas generally?

Colonel DIXON. Yes, sir.

(The information requested appears on pp. 167 et seq.)

INCREASE IN EMERGENCY PROGRAM

Mr. HAND. Is it fair to say, General, that this present work which is called an emergency program and which is a part of a continuing and perhaps an increasing emergency program has increased from last year to this year?

General CHORPENING. Yes, sir; it has.

Mr. HAND. And it may increase again?

General CHORPENING. Yes; it may increase again. I would like to hope, however, that we can catch and hold down these points where

serious erosion is endangering levees and structures so that we can close out this emergency portion of the bank stabilization program.

Mr. HAND. But, it is fair to say at this time, that we have no means of knowing what the estimated cost of this program will be?

It increased last year from the year before, and from last year to this year it increased from $18 million to $25 million, and neither you nor I nor anyone else can say what it might be next year, or the year after; is that so?

General CHORPENING. I do feel that now, having done quite a considerable amount of work and having had an opportunity to observe the effects of the revetments on the river from the work done that we are now considerably closer to a firm estimate than we have been at any time in the past.

Mr. HAND. General, are you in a position to give us any figures on the economic justification for each of these locations?

General CHORPENING. No, sir. As I stated last year when we had a request from the committee in connection with our fiscal year 1953 appropriations to endeavor to determine a benefit-cost ratio for the specific locations, we made an earnest effort to do that, and I personally reviewed what had been done, but concluded that any figures that we might produce are subject to so many intangibles and assumptions that they would not be meaningful in the manner that we normally can come up here and say that this project has a benefit-cost ratio of so much. The reason is that all of these various places are tied in with some other places upstream or downstream, and if a levee is breached at one particular place, the land there is not all that would be affected by the flood, but the water will come on down and get behind other places that we are trying to stabilize also.

So, I concluded that we could not in this instance be properly responsive to the request and desire of the committee.

BENEFIT-TO-COST RATIO

Mr. HAND. Without reference to a mathematical benefit-cost ratio, will you endeavor to make the table to which we have referred apply to the specific locations involved here, and give us the area which each location will tend to protect, so that we can see whether there is some economic justification for each separate location?

General CHORPENING. We can do that; yes, sir.

(The information requested appears on pp. 167 et seq.)

Mr. HAND. Do you have a benefit-cost ratio for the entire project as a whole?

General CHORPENING. For the entire comprehensive project on the Arkansas, the latest benefit-cost ratio is about 1.16 to 1.0.

MAINTENANCE BY LOCAL INTERESTS

Mr. HAND. The committee has been disturbed by some information we have which seems to indicate a lack of proper maintenance by local interests.

Would you care to comment on that, General?

General CHORPENING. Do you mean in connection with this particular project?

Mr. HAND. Yes, sir.

General CHORPENING. The maintenance of these works that we are building here would be a responsibility of the Federal Government.

Mr. HAND. Yes; but I suppose that we are talking about the lack of maintenance in regard to presently existing levee structures, where there is a responsibility?

General CHORPENING. I have no personal knowledge of such lack of maintenance. I would like to inquire of Colonel Dixon as to whether he has heard anything on that, and have him give us that information.

Colonel DIXON. The maintenance of the levees on the Arkansas River is a responsibility of the local interests. In general, that maintenance is eminently satisfactory. There are 1 or 2 instances where we have had to go to the drainage district, or the levee board—depending on the locality involved—and request them to do certain work. In general, the compliance is good.

There are 1 or 2 specific places where they have allowed grass to grow up, and have possibly not paid enough attention to road construction as it relates to the levees.

TUCKER LAKE LEVEE DISTRICT

Mr. HAND. Will you comment particularly on the Tucker Lake Levee District?

Colonel DIXON. Yes, sir.

Tucker Lake is a small levee district immediately above the town of Pine Bluff. It is very small, and financially not very stable. They have a relatively short stretch of levee which they have not been maintaining to the degree we would like them to. The district engineer is working with the Tucker Lake Levee District to see if they cannot resolve that problem. One of the problems they had was that they were allowing the grass to grow up on the levee.

In connection with that, they had a drought this year, and so the drought killed most of the grass, and that took care of some of the maintenance for them. But, it is a problem.

Mr. HAND. Is it not so that there is a general deterioration, particularly in that levee district, in addition to merely high grass?

Colonel DIXON. To my knowledge, there are several road crossings which they should maintain. In other words, they have degraded the levee a little bit.

Mr. HAND. The roads are cut into the levee, and they are not maintained up to grade?

Colonel DIXON. That is right; but again, it is a question of a foot or so. Looking at it from a flood point of view, they could sandbag that particular reach. It is not what we desire, and it is something we are trying to get the district to correct.

General CHORPENING. I would say in that connection that all of our difficulties are not always directed toward securing proper maintenance that local interests agree to. They also are not all confined to the Arkansas River. We have that difficulty in many places, and that is one of the things that we continually impress on our district engineers and they, in turn, impress on the local interests to get busy and to do the maintenance that they have agreed with the Federal Government to do.

The levee districts, or the drainage districts, do occasionally get into financial difficulties, either real or fancied, and we find difficulties

therein. I have had experience myself as a district engineer. I have called in the county commissioners and others in authority and said, "You gentlemen have got to get out there and do this job."

About the only way you can really get at them is by such action.

In the last analysis, you could go to court, but that does not repair the levee. It is a matter of personal action and vigorous action, and a matter of trying to awaken the civil consciousness of the people involved.

Mr. HAND. They should have some regard for the enormous burden of taxation which is necessary for the purpose of maintaining these levees. Sometimes it reaches as much as 2.5 mills to 3 mills, and there is a tax in addition to that of 25 cents an acre. They ought to have lots of money. They are bleeding themselves white to maintain these levees.

General CHORPENING. The point I want to make is that the Corps of Engineers is not standing by and allowing these things to happen. We are doing our best to get the local people throughout the country to pick up their share—their guaranteed share.

Mr. HAND. But in the absence of a possible court action, your activity is limited largely, as you say, to pounding the table; is that right?

General CHORPENING. Yes, sir.

Mr. HAND. Do you have any other comments to make on any particular districts other than the Tucker Lake area, and this area we are now discussing in which the deterioration of the levee is apparent?

Colonel, do you have any other comments on the other districts in that area?

Colonel DIXON. Further down the river below Pine Bluff I believe you would find the maintenance is being done to a very high degree of satisfaction on the south bank.

On the north bank, you would find areas where they are not maintained. The reason is that at certain sections we have under consideration, as General Harding will testify, the possibility of raising those levees. So, we have not been as insistent with those levee districts as we have others about maintaining them to a high degree, for we felt that in the next year or so we were going in to rebuild the levees.

But, other than that, the maintenance is fairly good, sir.

General CHORPENING. I would like to mention this also in connection with all local protection projects. At the time we complete them, we do prepare maintenance manuals which are then turned over to local interests. Those maintenance manuals give very precise instructions as to what the local interests will be expected to do. If there are pumping stations involved, there is information as to what they should do in connection with the maintenance and care of the stations.

Then, periodically, at least once a year, and in many cases twice a year, from the operations section of the district, inspections are made of those structures that have been turned over to local interests, and if they are deficient in maintenance, those deficiencies are called to the attention of the local interests.

MAINTENANCE OF LEVEES BY LOCAL INTERESTS

Mr. HAND. Since you have indicated that the problems are not confined to the Arkansas area, and that you have a continuing and a fairly extensive problem in requiring the local interests to maintain

levees in accordance with what they have contracted to do, have you any recommendation to give us now, or later for the record, summing up, so to speak, our relationship with the levee districts on a more sound and readily enforceable contractual basis?

General CHORPENING. I do not want to leave the impression here that we do have difficulty with the majority of the local interests. It is very decidedly in the minority. I would say that with about 80 to 90 percent, at least, we have little or no difficulty. I have visited many local protective projects where not only are the local interests doing what they should do, but they are very proud of what they are doing, and have extended that cooperation by keeping their project in beautiful order and repair. I am sure you are familiar with how proud the levee districts are along the Mississippi of the appearance and maintenance of their levees.

Mr. HAND. We have seen some splendid examples of it, but what are we going to do with respect to the 10 percent or 20 percent remaining that are not doing the job properly?

General CHORPENING. As a practical matter, it is a pretty difficult thing to do. I think the measures that I have pointed out that we are taking, and which I consider we should take, are probably as adequate as we will ever have. I do not know just exactly how you would proceed otherwise.

Mr. HAND. We do have a contract with them; do we not? Do we have a formal agreement with them?

General CHORPENING. We have assurances made by the local interests which have been approved by the Secretary of the Army on our recommendation.

Mr. HAND. Assurances in writing?

General CHORPENING. Yes, sir.

Mr. HAND. I take it that those assurances are tantamount to a contract?

General CHORPENING. Yes, sir.

Mr. HAND. You do not have any particular suggestion as to how we would better that situation?

General CHORPENING. No, sir.

Mr. DAVIS. Would you furnish the clerk of this committee, for our committee files, a statement indicating those areas where the local interests are not meeting their obligations for the maintenance of these levees on the Arkansas River?

General CHORPENING. Yes, sir; I shall be glad to do that, sir.

Mr. DAVIS. Let us enlarge that, and make it include any other area where you have that similar difficulty.

General CHORPENING. Yes, sir.

(The information requested was furnished to the committee.)

EMERGENCY PROGRAMS

Mr. DAVIS. Last year we had before us specific locations, and then there was a lump-sum amount for emergency purposes, and the committee indicated its displeasure with attempting to deal with any lump sum for emergency.

I take it in this justification before us you have tied each portion of the requested funds to a specific job at a specific location?

General CHORPENING. That is correct, sir.

Mr. DAVIS. What assurance can you give us that each of these reaches of the river where you are trying to do some work will be part of a project to reach from hard bank to hard bank in each case, so that we know what you may do this year will not be dissipated and lost?

General CHORPENING. That is our overall engineering plan, and we plan at each of these places to tie it down in that fashion to avoid losing a part of what we are doing now.

Mr. DAVIS. Is that true of each of these reaches that you have mentioned in the justifications now before us?

General CHORPENING. It is to the extent that we can do it.

Of course, this being an emergency program, we do not want to go any further in a reach than we possibly have to and add to the expense of the reach. So, there may be some places mentioned here where we are taking something in the order of a calculated risk, and not carrying them as far as if we were going ahead with the overall navigation plan on the Arkansas River.

Mr. HAND. Do you feel that the erosion and bank deterioration problem on the Arkansas River is of substantially more serious nature than the situation on the Missouri River north of Omaha?

General CHORPENING. They are quite similar problems, and they are quite similar rivers. They are located in an alluvial valley where the river does have a tendency to swing back and forth in its normal regimen, and attack the banks and erode them.

We do have a situation on the Arkansas which is different.

Mr. HAND. That situation is different?

General CHORPENING. Yes, sir; it is different from the Missouri in that, on many stretches of the Arkansas, levees have already been built so that you are endangering not only the land but you are endangering the levees. On the stretch of the Missouri from Omaha to Sioux City, we are endeavoring to stabilize the river so that we can proceed with our agricultural levees program.

Mr. HAND. Do you feel that they are problems that are similar in their nature and in their intensity, so that probably we are making a mistake in treating them differently with respect to funding in the current fiscal year?

We are providing some funds here along the Arkansas, and for several years it has been the funding policy to refrain from providing funds on the stretch of the river north of Omaha.

Is that different treatment justified in your opinion?

General CHORPENING. I think, as I pointed out, the difference is that on the Arkansas at many of these locations we already do have the levees existing. Or, at other locations, as we have stated, the reason for doing this work now is to protect important transportation crossings, either bridges or pipelines, or whatever they may be.

Of course, in the stretch just above Fort Smith, the necessity there for the work is to protect the city of Fort Smith and to prevent a possible breakthrough of the river into the Poteau River. Very serious repercussions would come about should that happen.

Mr. HAND. Do you feel that this work which you are doing on the Arkansas is actually making progress toward stabilization, or is it just a case of buttoning it up here, and having it break out somewhere else?

The latter appears to be true in view of the increase from year to year in the estimate that you bring before us.

General CHORPENING. I definitely feel that we are making progress; that the work done is looking toward a stabilization of the particular areas, and believe me, we want to confine this to what we consider an emergency program, and not by any stretch of the imagination, go into the navigation plan.

Mr. HAND. That is the nature of it, and it is referred to as emergency work, which is what it probably is, but there is an inference that this work that we are doing from year to year is not conceived as an overall attack on the stabilization of the Arkansas River.

General CHORPENING. We have never indicated that it was such. It has always been indicated that it is to take care of only those emergent situations that exist but with the view in mind of fitting it to the final plan for the river.

Mr. CEDERBERG. How do you determine when the emergency ends, or will it ever end?

General CHORPENING. I hope it is going to end, sir. As I have stated, each year we, in looking at the river, take note of the places where we do feel that there is an actual emergent condition, but the river itself determines that to some extent. It is very difficult to anticipate with too great a degree of accuracy how rapidly the river may erode those banks at any particular place. As I said before, it is not completely determinable with regard to the works we build, as to the impact they may have on the river, after they are constructed.

Mr. CEDERBERG. The original intent of this reach project is not navigation, then?

General CHORPENING. In regard to this work, that is correct.

Mr. CEDERBERG. The long-range view of this project as I see it is not to make this river navigable from Catoosa, Okla., to the Mississippi River, which is a distance of 480 miles?

General CHORPENING. The authorization on the Arkansas River does propose navigation up to the vicinity of Catoosa, Okla. This work, which we are doing under that authorization is being done in a manner that would tie in to such work, when, and if, appropriated for by the Congress. It is not being done for navigation at this time, however.

Mr. CEDERBERG. I have no fear that this particular project right now is placed in the wrong spot, so far as we are concerned here.

Certainly, navigation is what it is listed under, and what we are hearing it under, and yet there are some areas, as I understand it, probably due to the drought situation where you can walk across the river, or very nearly walk across the river, at some points.

If we are going to wind up in years to come with the building of multipurpose reservoirs, locks and dams, there is probably no end to what may be involved in that 480-mile stretch so far as finances are concerned. It does not seem to warrant it to me.

As one member of the committee, I would like to see it under some other heading than navigation because I think it gives it a little taint that probably there is some idea of spending millions and millions of dollars to make that a navigation project.

General CHORPENING. It is carried there because the authorization is a navigation authorization.

Mr. CEDERBERG. Of course, it has always been done, but I do not see how you can authorize a project for navigation when you have a river there that has never by nature been even remotely intended to be navigable, but, of course, I realize that is something that the corps does not have to determine.

The corps, using 1951 prices, estimates that the first cost of the multipurpose plan is $1,043,244,000, of which $796,123,000 will represent the so-called navigation features of this overall project. Is that correct?

General CHORPENING. Those figures are approximately correct; yes, sir. I do not know the document from which those came but, generally, that is correct and includes the stabilization work.

Mr. CEDERBERG. That is on a stream which at the present time, in some areas, we could probably walk across. Then, it has a cost to benefit ratio estimate by the Corps of Engineers of 1.16, which even itself might be subject to question, I would think.

General CHORPENING. I want to say with regard to that statement that in some areas you could walk across, but that is only at extremely low-water periods. I want to also make clear again that it is true of other rivers which have been improved, and where the navigation has been very well justified.

HUMBOLDT HARBOR AND BAY, CALIF.

Date	Unobligated balance	Unexpended balance
June 30, 1953	0	0
Dec. 31, 1953	$29,016	$29,234
June 30, 1954 (estimated)	0	0

Statement of average annual benefits

Navigation: Savings in transportation costs for lumber and petroleum products	$191,000
Average annual charges	67,800

No continuing contracts in force or proposed for fiscal years 1954 and 1955.

Mr. DAVIS. The subcommittee will resume this afternoon with the project for Humboldt Harbor and Bay, Calif.

Mr. CEDERBERG. This project has a total estimated cost of $3,388,900, with local contributions of $95,000, and the Federal estimated cost of $3,293,900, and the total appropriated to June 30, 1953, is $2,778,900.

The appropriation for fiscal year 1954 is $250,000, bringing the total appropriation to $3,028,900.

The amount requested for fiscal year 1955 is $265,000.

General, the amount appropriated for this year will substantially complete the project; is that correct?

General CHORPENING. That is correct, sir.

Mr. CEDERBERG. There will be no request for additional funds for this particular project?

General CHORPENING. That is correct.

Mr. CEDERBERG. Will you advise the committee of the intended use of the $265,000?

Colonel DIXON. The $265,000 is to continue the dredging work that had been initiated with money appropriated last year, that is,

to deepen the entrance channel across the bar and between the jetties to 40 feet, and to deepen the North Bay, Eureka, and Samoa Channels to 30 feet.

The total estimated cost is $515,000 for the 1952 modification of the project, of which $250,000 was appropriated last year.

Mr. CEDERBERG. The waterway to this particular harbor is complete, then, all the way to Coos Bay, Oreg., at the present time; is that correct?

Colonel DIXON. This is not an inland waterway in that sense; this is a specific harbor. It is not directly connected with Coos Bay; it is a harbor on the Pacific Coast, and the only deepwater port between San Francisco Bay and Coos Bay, a distance of 380 miles.

Mr. DAVIS. What has been the story on the construction of this project in the past?

General CHORPENING. I do not know that I understand the chairman's question.

Mr. DAVIS. Evidently there was considerable work done in some years past, and then a period of time when there was nothing done, and there was a resumption again last year. Is that about the story?

General CHORPENING. That is correct. The authorizations covering this project go back quite a considerable period of time. The authorization under which the present work is being done, was passed by the Congress in July 1952, which is a modification of the earlier authorizations.

TONNAGE

Mr. RILEY. Do you have any figures showing the tonnage at the present time?

General CHORPENING. Yes, sir.

Colonel DIXON. We have the tonnage figures for 1952, showing there were 278,000 tons.

Mr. RILEY. How much?

Colonel DIXON. The tonnage was 278,000.

Mr. RILEY. Principally of what?

Colonel DIXON. Principally of lumber products.

General CHORPENING. Lumber and petroleum.

Mr. DAVIS. What do you anticipate it will be after this improvement has been completed?

Colonel DIXON. We expect the tonnage to go up to approximately 560,000 tons.

REDWOOD CITY HARBOR, CALIF.

No construction funds available.

Statement of average annual benefits

Navigation: Savings in transportation costs	$176,800
Average annual charges	108,500

No continuing contracts in force or proposed for fiscal years 1954 and 1955.

Mr. DAVIS. The next project is the Redwood City Harbor, Calif., with a total estimated cost of $1,713,400. The appropriation to date totals $129,900, and we have before us a request for $1 million.

I would assume from the figures that only planning work has been completed at this site; is that correct?

General CHORPENING. The funds appropriated to date have been utilized for work under previous acts of the Congress. This is the

first request for construction funds on a new portion of the overall project. It is one of the new starts included in the budget, which I referred to this morning.

Mr. DAVIS. Last year from time to time the matter came up that there was considerable difference of opinion, locally, with respect to this project. If I recall correctly, they had a local referendum with respect to a bond issue, and it was not too successful from the pro point of view. Can you tell us about that?

General CHORPENING. That is correct, that was in connection with another part of this project which it is not contemplated building at this time, nor is it asked for in this request for appropriation.

I think it can be seen better from the map that is at the back of the justification sheet, the portion shown in brown is contemplated after fiscal year 1955. That is the part for which the bond issue did not pass. We do not contemplate constructing that portion at this time, nor are we asking for funds for it here.

The funds we are requesting now are for further widening and deepening of the existing deep draft channel and turning basin as indicated in red on the map in front of the chairman.

BENEFIT TO COST RATIO

Mr. DAVIS. Can you give us a separate breakdown of any kind, as to the benefit to cost ratio for this particular work for which you are asking the amount of $1 million?

General CHORPENING. The benefit-cost ratio, as indicated here, is 1.6 to 1 for the modification of the project as authorized in 1945.

Mr. DAVIS. In view of the difficulties that have occurred with respect to doing the work which we discussed last year, and which appear to be somewhat remote, in view of the attitude locally and other considerations, are we justified in proceeding with that portion you are asking for, with the $1 million?

General CHORPENING. I consider that we are, yes, sir; because on the portion for which we are asking funds, no local cooperation is required, and this will very definitely be of benefit to the shipping now utilizing this harbor.

Mr. DAVIS. In the absence of the widening and deepening of the basin, which is the portion now before us, can there be maximum utilization of this channel that you are seeking to deepen and widen?

General CHORPENING. We considered that there can be; yes. Do you have anything to add to that, Colonel Dixon?

Colonel DIXON. Yes. In that connection I want emphasize, Mr. Chairman, that the 1.6 benefit to cost ratio results from an analysis made in recent months, and applies specifically to the modification of the project we are asking funds for now. In other words as General Chorpening has indicated, we are talking now about the 1945 act, and the estimated cost for that is $1,045,600, of which we are asking $1 million, which may complete the features under discussion now.

The justification of 1.6 is based on traffic that is presently there. The objections last year, as I understand the question raised, were based on the tonnage that would be taken from San Francisco and certain other ports. In our opinion that is not the case, because the justification is based on 2¾ million tons of which 522,000 is cement, manufactured in the immediate locality. This is hauled by ship

now. It is not conceivable that they would want to change their method of operation and ship by rail to San Francisco and then haul it out by boat.

The same reasoning applies to salt shipments. There is an extensive salt industry in the immediate area of Redwood City, which shipped 350,000 tons by boat.

Gypsum is another bulk commodity that comes in from Mexico, and goes to Redwood City, where it is manufactured into wallboard and other products. There again, that commerce is hauled by ships today, and it is not traffic that would be taken away from other ports in the immediate locality.

The benefits given are all based on savings to existing shipping.

Mr. DAVIS. To the extent that these facilities are used, we certainly cannot anticipate that they are going to have water shipment in lieu of some other kind of transportation at the present time, can we?

Colonel DIXON. No; you are correct, sir.

Mr. DAVIS. If they use these facilities, then, to a substantial extent, it is going to mean a diversion of water shipment from other facilities in the San Francisco Bay.

Colonel DIXON. No, because the facilities are now existing in Redwood City, and traffic exists there today. The proposed deepening at this project, would mean they could load ships more heavily and save time on handling the materials in that locality.

General CHORPENING. Which originate there, and which generate the traffic now moving.

LOCAL COOPERATION

Mr. DAVIS. Where are the terminal facilities and other related facilities to be furnished by local interests to be located? Are any of them to be in that part of the channel for which this $1 million is requested?

Colonel DIXON. No; there is no element of local cooperation required for this modification that we are talking about today in the 1945 act. The local interests have furnished contributions, you might say, in the form of rights-of-way and easements, but it was not a requirement of law. In other words, all elements of local cooperation for this particular project are satisfied.

Mr. DAVIS. This existing traffic that you speak of is all oceangoing traffic; is it?

Colonel DIXON. About a million tons is oceangoing traffic, sir.

Mr. DAVIS. The thing that concerns me here is that last year I understood that none of this particular work was included in the estimates last year; was it?

Mr. SMET. No, sir.

Mr. DAVIS. Was any of this work included in the $1 million?

General CHORPENING. None of this work was included, and there was no request in the revised budget as submitted last year for this project.

Mr. DAVIS. Before the budget was revised, was this part of it which is shown in the brown chart down here on the sheet, in the budget?

General CHORPENING. The same part that we are referring to now was in the budget, originally, last year, but was later removed in the final submission.

Mr. HAND. Will you straighten me out on this one point, as shown on the map which you are speaking about, that is, the channel with the 5-foot depth. How is that connected with the harbor?

Colonel DIXON. That is to the Steinberger Slough, which is a completed feature of the old project—it could only accommodate barge traffic; it has a very shallow draft.

Mr. HAND. Where does it connect; what does it serve in the harbor; what kind of vessels use the 5-foot channel?

Colonel DIXON. It is for barge traffic and small craft, but I cannot tell you about the type of commodity which moves there.

Mr. HAND. That is the completed portion of it?

Colonel DIXON. Yes, sir.

Mr. HAND. It has nothing to do with the use of the harbor itself?

Colonel DIXON. No, sir.

General CHORPENING. It is simply an auxiliary to the harbor, completed some time in the past. We could give that to you if you wish.

Mr. SMET. The 5-foot channel to Steinberger Slough was completed in 1911.

Mr. CEDERBERG. If this improvement is made in this particular location, then can we assume that there is going to be an increased tonnage here?

TONNAGE

General CHORPENING. We are not defending this project on additional tonnage at this time. I think, following the pattern as a whole, that there may be some increase in tonnage, but we did not determine the benefit-cost ratio on that ground.

Mr. CEDERBERG. I was just wondering where the increased tonnage would come from, if it were not going to come from other harbors in the vicinity, would there be standard facilities around the particular harbor because of the improvements made?

General CHORPENING. If there should be greater tonnage come in, it would be because the shippers determined that it was cheaper for them, in the overall, to go through this port, rather than some other port, where they would have to tie in with other means of transportation.

Mr. CEDERBERG. It seems, in view of that, that there should be a real interest on behalf of the local people rather than opposition, so there must have been some other factors which caused this opposition in turning down the bond issue. In other words, evidently they are not sold themselves that there will be an increase.

General CHORPENING. What we are proposing to do here is not that portion of the project where the bond issue was turned down. I think I am correct in saying that under the local law, a bond issue has to have a two-thirds majority, and I believe that the actual vote was something in the neighborhood of 60 percent, not the 66⅔ percent as required.

Colonel DIXON. The vote was 62 percent favorable.

Mr. RABAUT. This is a new project?

General CHORPENING. Yes; a new start.

Mr. RILEY. There is no work going on there now?

General CHORPENING. No, sir. Of course, this being a dredging project, very little planning is required, so we use standard dredging specifications.

Colonel DIXON. The total appropriation to date, of $139,000 went into the completed features.

HOUSATONIC RIVER, CONN.

No construction funds available.

Statement of average annual benefits

Navigation: Reduction in transportation costs by using larger and more efficient vessels	$260,000
Average annual charges	66,900

Data on continuing contracts	*Estimated contract earnings*
Continuing contracts in force	None
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955: Dredging, 18-foot channel	$981,000

Mr. DAVIS. The next project is found on page 74 of the justifications, for the Housatonic River, Conn., with the total estimated cost of $1,499,000, and an estimated local contribution of $150,000, making a total estimated Federal cost of $1,349,000.

There have been appropriations to date of $234,000, and we have before us a request for $500,000.

This again is a project where the use of the appropriations thus far have been for planning; is that correct?

Colonel DIXON. The $243,000 was spent on previous modification of the project.

General CHORPENING. This is considered a new start on additional features of the project. We consider it as one of the new starts in the presentation.

Mr. DAVIS. Has there been work on the other points or just what do you mean when you say that?

General CHORPENING. On the chart, which is a part of the justification sheets, it will be noted that the black shows the work completed as of June 30, 1953. It has been quite some years, of course, since the work was done, and you will note that the work consisted of a breakwater and dike, and a little dredging of bars for the 7-foot project which is indicated in black on the map. I think that was all done quite some time ago.

Colonel DIXON. 1916 was the last time work was done.

Mr. DAVIS. Your plan calls for the completion of this particular phase of the project.

General CHORPENING. Yes. Again these works are channel dredging, and there is little planning required since we use the standard dredging specifications for this work.

Mr. DAVIS. Is all of the work on this project on the 18-foot channel, or is there some of it for future years that will apply to the 7-foot channel?

General CHORPENING. All of it applies to the 18-foot channel.

Mr. DAVIS. What is the particular advantage of the 18-foot channel here when within a very short distance you run into a 7-foot channel where the most you could expect would be barge traffic, and obviously you are not going to be able to handle anything very big on the 18-foot channel?

Colonel DIXON. The principal users of the channel are located on this lower 5-mile stretch. For instance, the biggest user is the Connecticut Power & Light Co., which at the present time brings in some 500,000 tons of coal. They expect to double that in the next

10 years. At the present time they are using relatively light-draft barges, because of this shallow depth, barges of 1,000-ton capacity. With the channel deepened, they will be able to haul coal in 3,000-ton barges.

Mr. DAVIS. Will the 18-foot channel get down to the terminal where the oceangoing vessels tie up there?

Colonel DIXON. There is no oceangoing traffic there.

Mr. DAVIS. Where do they go to pick up this coal?

Colonel DIXON. It comes in through Long Island Sound, and these barges haul the coal up to the plant of the power company.

Mr. DAVIS. What the chairman is asking is where is the coal loaded on to these barges; where is the point of origin for the loading of these barges?

Colonel DIXON. Perhaps in New York Harbor——

General CHORPENING. The barges load at the Jersey piers in the port of New York. It is transported there by rail and then the barges take it on.

Mr. DAVIS. What is the length of this 18-foot channel for which work is contemplated?

Colonel DIXON. Five miles.

LOCAL CONTRIBUTION

Mr. DAVIS. The original cost estimate on this project appears to have been a total of $573,000, with $200,000 representing local contribution. We have a total cost estimate now of well over double that amount. Have any adjustments been made which will require additional local contribution?

General CHORPENING. No, sir. The original estimate of course is based on the authorization which was in 1930. So it is quite obvious, the reason for the increase in the cost estimate is due to the great increase in price levels since that time. The amount of local contribution was originally fixed, and I will ask Colonel Dixon to indicate why there is this difference between the $200,000 and the $150,000.

Colonel DIXON. The local contribution recommended by the Rivers and Harbors Board and as later authorized, was $150,000, and the furnishing of a bulkheaded disposal area; or instead of furnishing the bulkheads to furnish an additional cash contribution of $50,000.

Now, the local interests have elected to pay the total cash contribution of $200,000, that is, the $150,000 plus the $50,000 in lieu of bulkheads. It has developed recently that we do not need this particular bulkheaded area; other disposal areas have been furnished by nearby communities, we will not need the previously required disposal area, so the net effect is that the Federal Government will receive a cash contribution of $200,000 and we will not have to do the bulkhead work.

Mr. HAND. Are you still charging the local interests for that $50,000 in lieu of the bulkhead area, since that will not have to be furnished?

Colonel DIXON. The local people have expressed a willingness to pay the $200,000.

Mr. DAVIS. What percentage of the total cost is decreased? They may furnish $200,000 rather than $150,000, the amount given us, but what is the percentage of decrease?

General CHORPENING. That goes back to the matter we discussed earlier. Here this was established as a fixed sum in the original authorization, and we now do realize that that is a rather undesirable arrangement, from the Government's viewpoint, and our present policy is to express that in percentage terms rather than in fixed amounts. However, this would require a revision of the law to increase the amount of the contribution, or willingness on the part of the local people voluntarily to increase it.

Mr. DAVIS. Is this cost estimate, which appears in the justification a currently firm estimate?

General CHORPENING. Yes.

Mr. HAND. By whom will the local contribution be paid?

Colonel DIXON. The Connecticut Power & Light Co., which will receive the coal, but by law in the State, the savings in transportation costs will be passed on to the consumer. There is quite a saving here of around 50 cents per ton to the coal user. That saving will be passed on to the consumer.

Mr. RABAUT. I notice here the barges used at the present time are to convey this coal from New York.

Colonel DIXON. Yes, sir.

Mr. RABAUT. 1,000-ton-capacity barges require the 7-foot channel. Now, under the proposal the barges with 3,000-ton capacity would be using the additional channel, which will require a channel how deep?

General CHORPENING. 18 feet, sir.

Mr. RABAUT. Now is the committee informed at this time that with the work that is to be done that all of the rest of the channel is of sufficient depth to permit the barges to operate?

Colonel DIXON. The destination of the barges is within the region of the 18-foot project.

Mr. RABAUT. What do you mean by destination; is that in time or what?

Colonel DIXON. Their final destination going up this channel is within the 18-foot depth.

Mr. RABAUT. So what we are going to correct here is the bottleneck where the 3,000-ton barges are having trouble getting in there now?

General CHORPENING. The deepwater exists from the point where they are loaded up to here.

Mr. RABAUT. Very well. I notice here, as indicated by my colleague a moment ago, that the saving in fuel costs by law is to be passed on directly to the ultimate power consumer. I think it is very well to have that pretty strongly stated in the record so that people who read the record occasionally might know that this transfer will exist.

Mr. RILEY. General, do I understand that you have to go 5 miles in order to get the full benefit of this 18-foot depth channel?

General CHORPENING. That is correct.

Mr. RILEY. The appropriation you are requesting now will dredge 2 miles, approximately?

Colonel DIXON. That is right, sir.

Mr. RILEY. In other words, unless you get additional appropriation they still will not have the benefit of the channel, will they?

General CHORPENING. That is correct. This project we estimate would extend over 2 years, and as is indicated, the balance to complete after this year is $615,000.

Mr. RILEY. Then the next question that occurs to me is this, is it more economical to spread it over 2 years, or to do it all at one time? In other words, do you have a certain amount of silting coming in there, and if it is delayed too long you will have to dredge out twice in some areas?

General CHORPENING. I do not consider it so. The amount of maintenance or silting that might get into the channel would be no greater during the period of construction than it would be after the completion of construction.

Mr. RILEY. It is more than likely that you would have to keep the channel open, would you not?

General CHORPENING. Undoubtedly there will have to be pretty regular maintenance in the channel after completion. We have made an estimate as to what that would be; that entered into, of course, the determination of the benefit-cost ratio. What did we estimate the amount of maintenance on this project would be? That is in the planning report.

Mr. SMET. The annual charges are $66,900, including amortization of the investment as well as maintenance.

Mr. RILEY. Would it be more economical to do the job in 1 year or do you think it is just as economical to do it over a 2-year period?

General CHORPENING. I think in this instance it is very difficult to prove definite saving over doing it in 1 year.

Mr. DAVIS. I notice in the planning report on this project that the sounding survey is yet to be made. I am wondering how firm the cost estimate can be in the absence of the completion of that survey?

General CHORPENING. Well, obviously, right after the up-to-date sounding, and prior to advertising, we might have some variation, but we do not consider that in this instance there will be any essential variations between the soundings. I would have to check to see how long ago the sounding was made but it probably was during fiscal year 1953. I can say, however, that prior to advertising for bids, we will get the data so that the bidder will have the most recent information in order that we can get the best possible bid.

CALUMET HARBOR AND RIVER, ILL. AND IND.

No construction funds available.

Statement of average annual benefits

Navigation: Savings due to elimination of delays in vessel loading operations	$16,100
Average annual charges	6,400

No continuing contracts in force or proposed for fiscal years 1954 and 1955.

Mr. RILEY. The next project is the Calumet Harbor and River, Ill. and Ind. I assume that is a suburb of Chicago, is it?

General CHORPENING. Yes, sir.

Mr. RILEY. I notice that there was no appropriation for the fiscal year 1954. Before that there was $5,616,500 appropriated so evidently this work has existed there for sometime. Is that right?

General CHORPENING. This work on the Calumet River and Harbor has covered quite a long period of time. It has been the subject of a number of authorization acts. The latest authorization

having application was in 1945. Do we have the year when the last appropriations were made for this project, Mr. Smet? It was quite some time ago.

Mr. SMET. About fiscal year 1944, sir.

General CHORPENING. This is considered as a resumption and not a new start.

Mr. RILEY. I notice you are asking for $110,000 for the fiscal year 1955. Would you explain to us what that is to be used for, please?

Colonel DIXON. This is a very specific problem area in the Calumet River, and is located at 100th Street in Chicago. It is to widen and deepen this particular region of the river.

The reason for working at this specific location at this time is that they are now enlarging the rail transfer facilities and building a new dock. We want this new dock to be on the alinement of the stream as it eventually should be under the authorization.

Mr. RILEY. Will this money enable you to complete that particular project?

Colonel DIXON. Yes, sir.

Mr. RILEY. As shown here?

Colonel DIXON. Yes. This particular item of the project will be completed, and it will solve this particular problem.

Mr. RILEY. Do you have any plans for subsequent fiscal years, subsequent to 1956, with reference to the proposed remainder of the work?

Colonel DIXON. Not for this specific location. As the appropriation breakdown indicates on page 80, the balance to complete after 1955, will involve $5,419,500, and is a long-range project, of easing the bends, and widening the Calumet River and deepening shoal areas in the harbor. We might have another similar problem to this which may come up next year.

Mr. RILEY. So it does not necessarily follow that you would have to have an appropriation in 1956?

Colonel DIXON. No. It will not be a continuation of this feature of the project. This $110,000 will definitely finish this particular feature.

MISSISSIPPI RIVER, BETWEEN MISSOURI RIVER AND MINNEAPOLIS, MINN. (EXCLUDING ST. ANTHONY FALLS AND NEW LOCK NO. 19)

Date	Unobligated balance	Unexpended balance
June 30, 1953	$175,449	$344,451
Dec. 31, 1953	101,016	159,400
June 30, 1954 (estimated)	0	0

Statement of average annual benefits

Navigation: Average annual savings in transportation costs on the estimated median commerce during the 50-year economic life of the project	$18,600,000
Average annual charges	12,720,000

No continuing contracts in force or proposed for fiscal years 1954 and 1955.

NOTES.—(a) Benefits and annual charges include lock No. 19 and St. Anthony Falls extension which are integral parts of the project.

(b) Unobligated and unexpended balances shown above are principally related to features of work other than for which funds were appropriated in fiscal year 1954.

Mr. DAVIS. The next project we have before us is the Mississippi River, between the Missouri River and Minneapolis, with rectification for damages, at a total estimated Federal cost of $5,233,800. The total appropriations to date have amounted to $1,952,700. We have before us a request for $70,000, which is a very familiar figure to us, but the rest of these figures have changed considerably since last year. Will you explain this item to us, General?

General CHORPENING. Colonel Dixon.

Colonel DIXON. The $70,000 is to pay off the levee boards for additional pumping costs.

Now the amount to complete, as I understand your question, Mr. Chairman, is to pay off the capitalization, since we are ready to recommend that we stop paying out this $70,000 each year.

General CHORPENING. I think the chairman's question is this. Apparently, there is some difference between the total cost now and what we showed last year. As has been testified here in years past, under the 1937 act, there is an endeavor to get at a rational approach, a determination of what should be paid to the local interests who have greater pumping problems due to the backing up of water in front of their levees, from these locks and dams. It was concluded by the Congress, and we were directed to proceed over a period of time to make a study of what those costs actually amounted to and, at some time in the future, to be able to come up with a recommendation for a capitalized amount which might be paid to quiet these claims against the Government.

We are getting to the point where we hope we are going to be able to make a recommendation that will effectively resolve most of those questions. That report, I may add, is now in the hands of the River and Harbor Board for action.

As I recall, it does not completely settle all of the items. The difference between this estimated cost and what we showed last year, I believe ties into the report now before the River and Harbor Board. Is that correct?

Colonel DIXON. Yes; that is correct. As I understand it, last year there was shown in our summary sheets the overall cost of the Mississippi River between the Missouri and Minneapolis, amounting to some $175 million. This cost estimate pertains only to this particular feature of the overall project.

Mr. DAVIS. The replacement or cost of rectification of damages did not appear last year anywhere in the record.

I think the members of the committee are familiar with this $70,000 item, and we are pleased to note that we are approaching a point where we may be able to capitalize this item and reduce the annual charges which have been Federal expenses.

LOCK NO. 19, MISSISSIPPI RIVER, KEOKUK, IOWA

Date	Unobligated balance	Unexpended balance
June 30, 1953	$32	$418,657
Dec. 31, 1953	2,699,265	2,811,451
June 30, 1954 (estimated)	0	2,443,800

Statement of average annual benefits

Navigation: Average annual savings in transportation costs on the estimated median commerce during the 50-year economic life of the project	$18,600,000
Average annual charges	12,720,000

Data on continuing contracts

	Estimated contract earnings
Continuing contracts in force: Stage I, construction of the lower guide walls	$1,637,100
Proposed in fiscal year 1954 but not yet in force: Stage II contract for the lock and appurtenances	14,897,200
Proposed in fiscal year 1955: Stage III contracts for power, control, and lighting	534,400

NOTE.—Benefits and annual charges are for the entire project, Mississippi River between Missouri River and Minneapolis, Minn., including lock No. 19 and St. Anthony Falls, which are integral parts of the project.

Mr. DAVIS. The next project is lock No. 19, Mississippi River, Keokuk, Iowa, where the total estimated Federal cost is $20,043,000. The total appropriation to date, including the 1954 appropriation of $3,800,000, has been $5,211,100.

The request before us now is in the amount of $3,200,000. I notice, General, that the estimated cost of this project has increased in the neighborhood of $600,000 plus. Is that based on any change in the project itself?

Colonel DIXON. The difference, $664,500, between this estimate and that of last year is a result of the price-level changes from 1952 to 1953.

General CHORPENING. The committee will recall that in the opening statement by General Sturgis, the overall increase in prices as between July 1952 and 1953 was in the neighborhood of 5.9 percent.

Now, in this particular case we are early in the project, and we have not and do not just take the 5.9 percent across the board, but on the items that are included in this project we concluded that the increase should be this amount, which is actually about 3 percent of the total estimated cost.

Mr. DAVIS. Has this work been proceeding as rapidly as had been planned, in view of the rather urgent nature of this project you testified to?

General CHORPENING. The committee will recall that in the fiscal year 1953 we only received something less than $1 million which was insufficient funds to go ahead with the advertising for the complete project. After careful analysis, we decided that, with that amount of funds, we should only go ahead with a limited part of the project, which was the lower guide walls.

Now, with the funds appropriated this year, $3,800,000, we have had to defer the time when we will advertise the biggest part of the project, so there will not be interference with the operation of the contractor who is now working there.

We expect to make this new contract award in the spring, and as the committee will note, we now schedule the completion of this project for the 30th of June 1957, a year earlier than we had contemplated last year.

There was some question by the committee, on the length of our construction period last year, and we are now endeavoring to push up the construction time 1 year. We believe that we can make it,

always on the basis that we receive adequate appropriations to go ahead at the scheduled rate.

Mr. DAVIS. Are you continuing to use the old lock there?

General CHORPENING. Yes, sir, continuing to use the existing lock, and, of course, expending only the minimum amount of maintenance that we feel we must to keep it in operation until the time the new one is ready to use.

Mr. HAND. What shipping points on the river are benefited by this project, except Keokuk?

TONNAGE TRAFFIC

General CHORPENING. This is lock No. 19 at Keokuk, Iowa, and is one of the units of the upper Mississippi River Waterway that extends all the way from St. Louis to the Twin Cities.

That waterway was constructed during the middle and late thirties, and the tonnage traffic on that waterway in fact, has considerably exceeded the estimates made by the Corps of Engineers at the time of recommendation to the Congress that this work be authorized.

Mr. HAND. At that the tonnage is not too heavy, is it?

General CHORPENING. It varies. For the whole waterway it is around 13 million tons, and the tonnage that goes through here, is how much, Colonel Dixon?

Colonel DIXON. At that lock, in 1951, it was 3,890,000 tons. For 1952, the actual tonnage through the lock was 3,734,100. In 1953, there is an indicated increase.

Mr. HAND. This language in the justification has struck me:

> Commerce on the Mississippi River has increased notably, the traffic through lock 19 in the period from the start of the 1953 navigation season to June 30, 1953, being about 1,880,000 tons.

General CHORPENING. That is only a portion of it here.

Mr. CEDERBERG. In other words, we have a project costing about $20 million, which will handle approximately 3 or 4 million tons of barge freight?

General CHORPENING. After maturity of the waterway, this lock will handle much more than that, but that is our experience on the tonnage as of this time.

Mr. CEDERBERG. As of this time.

General CHORPENING. Yes. In view of the very rapid increase of the tonnage, as pointed out earlier, over what we had planned for the 50-year life of this project, we think it will continue to increase tremendously.

Mr. RILEY. Will this $3.2 million complete the lock itself?

General CHORPENING. No, sir.

Mr. RILEY. Is this a continuing contract?

General CHORPENING. This is a continuing contract, and it will not complete the lock. There will be required additional funds to complete the lock, after fiscal year 1955. In fact, after fiscal year 1955 the lock itself will still require in the neighborhood of $11.5 million.

Mr. RILEY. When do you propose to complete it?

General CHORPENING. We propose to have this project in operation by April 1957, 3 years from this spring.

GREEN RIVER LOCKS AND DAMS, 1 AND 2, KENTUCKY

No construction funds available.

Statement of average annual benefits

Navigation: Savings in transportation costs on existing and immediately prospective traffic	$968,000
Average annual charges	666,400

Data on continuing contracts	*Estimated contract earnings*
Continuing contracts in force	None
Proposed in fiscal year 1954 but not yet in force:	
Construction of lock and dam No. 1	$5,433,500
Construction of lock and dam No. 2	6,980,300
Proposed in fiscal year 1955	None

Mr. DAVIS. We will take up the project for Green River locks and dams, which is another one of the 10 new or resumptive items included in this navigation program.

This project has a total estimated Federal cost of $14,399,000. The total appropriation to date I believe has been confined to planning money, and we have before us a request in the amount of $5,400,000.

General CHORPENING. The request in this regular budget for 1955 is $5,400,000. However, to realize the benefits directly discussed here in the justification, it is essential that a very early start be made on construction and a supplemental request for fiscal year 1954 of $800,000 is now before the Bureau of the Budget. We are advised that the supplemental request will be made to the Congress in the near future.

Mr. DAVIS. And I believe the President indicated in his message that this request is being made, did he not?

General CHORPENING. We understand it is in the budget.

Mr. DAVIS. I would suggest then that you justify both of these items at this time. That will obviate some necessity for a separate hearing on that amount, in view of the probability that it may be some time yet before the full committee will be able to handle the supplemental measure. We will be talking about one item as a practical matter anyway.

General CHORPENING. Yes.

Mr. DAVIS. Inasmuch as this is before the committee for the first time for construction funds, will you give us some of the historical background of this project, General?

General CHORPENING. There has been a navigation project on the Green River for many years—60 or 70 years to accommodate barges of 5½-foot draft.

In connection with the construction of the Atomic Energy plant at Portsmouth, Ohio, the coal requirements, which are very considerable for electric power, make it necessary to develop the coal deposit that exists on the Green River. Economical transportation of this coal would result in a definite saving in the cost of the power to be produced for use by the Atomic Energy plant at Portsmouth, Ohio.

Also the Tennessee Valley Authority is building steam plants and those plants or at least the Shawnee plant could utilize the high-grade coal existing on the Green River.

The 5½-foot project now existing does not permit economical transportation of that coal. Accordingly, we made an economic determination and we found that by modernizing the existing locks—there are two—we could have a very well justified project there that would result in this case in a direct saving to the United States Government.

Now, the authorization on these locks was handled under the 1909 act, which we discussed this morning.

As I mentioned this morning, this is an instance where we considered that we should go to the Public Works Committees to be sure that those committees concurred that the authorization under the 1909 act was in fact a proper use of the authority in that act. We did receive from both the Senate and the House Public Works Committees letters stating that in their opinion the use of the 1909 act for this project would be in accordance with the provisions of that act.

Now you might wonder why we did go back to the committee in this case. The reason is that we are proposing a modernization of the locks to provide for 9-foot navigation, whereas the authorization at the present time is for 5½ feet.

Also, it was not modernization for commerce which now exists, but for prospective commerce which would exist after the work is completed.

I want to bring out another point, so that the committee will have a clear understanding. In order to make this navigation project completely improved for the prospective commerce, there is some channel deepening required. That has been the subject of a survey, which has been completed, and is now in the hands of the House Public Works Committee.

The work we are requesting funds for, the modernization of the two locks, is authorized and the channel deepening is to be the subject of authorization.

Mr. DAVIS. Can you give us some general idea of the scope of the channel depths that are going to be required?

Colonel DIXON. We estimate that providing the channel depth will cost $3,358,000 from Lock 2 to the mouth.

Mr. DAVIS. What does that do to your benefit-to-cost ratio on these locks?

General CHORPENING. The 1.5 to 1 ratio applies only to the 2 locks, and the 1.7 applies only to the channel deepening.

Mr. DAVIS. What is you overall construction schedule on these locks and dams?

Colonel DIXON. With the $5.4 million plus $800,000, with that amount, we intend to enter into two continuing contracts, one of them the 1st of April and one the 15th of June of this year.

To be usable, the project has to be finished in the spring of 1956 to take maximum advantage of all these savings that have been mentioned in the justification sheets.

In regard to the two major continuing contracts, one will be for lock and dam No. 1 and one will be for lock and dam No. 2.

General CHORPENING. The committee will note in the sketch with the justification sheet that we are proposing, in the case of lock and dam No. 1, to use the existing dam and to do certain reconstruction on it.

Mr. DAVIS. You would anticipate requesting about $8 million for fiscal 1956 on this project; is that correct?

General CHORPENING. It is a little less than $8 million in fiscal year 1956.

Colonel DIXON. There will be some additional work in 1957, for which appropriations would be needed.

Mr. DAVIS. You would expect it to be operational in advance of the actual completion of all of the work?

General CHORPENING. That is correct, sir.

TRAFFIC IN COAL

Mr. DAVIS. You are anticipating a large increase primarily in traffic in coal. How is that being transported in order to be available at the present time?

General CHORPENING. Well, at the present time there is no generating plant. The generating plant has not been built that will use this coal.

If this waterway were not built, the coal would have to be obtained from some other place—wherever they would be able to get it the cheapest—but this is the cheaper source, and a better source than any other one that is available.

Mr. DAVIS. There are other plants that would use the coal here, as I understand it, other than this Portsmouth plant that you mentioned?

In regard to the number of TVA projects, are they using coal from this area at the present time?

General CHORPENING. Not to my knowledge, sir.

Do you have any knowledge on that, Colonel Dixon?

Colonel DIXON. No, sir, this project will develop those fields in Kentucky adjacent to the Green River.

Mr. DAVIS. Your justifications indicate that the TVA expects to use about 7 million tons a year by 1956, and 10 million tons by 1960. In the absence of this waterway facility where would we anticipate that they would get the coal? Would they use some other means of transportation to get it from this source?

General CHORPENING. I must assume that they have in mind other sources of coal which for reasons of their own due to the location of their plants would be more economical to secure than from here; but the information we have is that at least 3 million tons of their 1960 requirements would be utilized from this source.

Mr. DAVIS. Do you have any figures available to show the comparative cost of transportation by this means and such other means as might of necessity be used by the TVA and also by this atomic energy plant?

Colonel DIXON. The Atomic Energy Commission estimates that they will save 40 cents a ton by using this waterway and we estimate TVA would save 30 cents a ton on the average.

Mr. DAVIS. That is on the basis of about 3 million tons a year for the TVA plants alone; is that right?

Colonel DIXON. Yes, sir; we feel that it would take on the average 3 million tons a year from this source, and the atomic energy plant would take 1,780,000 tons plus or minus 10 percent.

In fact, they have a contract under consideration at the present time for that amount.

Mr. DAVIS. What were the figures that you used to obtain that 40-cent differential?

Colonel DIXON. The 40 cents was actually based on bid prices. My understanding is that the Atomic Energy Commission's supplier of electricity received bids from different sources and the indication was that if this waterway was developed the bid differential would be 40 cents, but they have to elect by August 1954 which 1 of the 3 bids they received they will take.

Of course, they are desirous of taking this one to save the 40 cents a ton. They cannot take this bid if the waterway is not going to be built or modernized.

I have with me, sir, a letter from Mr. Strauss of the Atomic Energy Commission that substantially states what I have said. If the committee would care, I will hurriedly read this letter.

Mr. DAVIS. If there is no reason why the letter cannot be included in the record, we will insert it at this point.

Colonel DIXON. I do not know of any reason, sir, why it could not be inserted.

(The matter referred to follows:)

UNITED STATES ATOMIC ENERGY COMMISSION,
Washington D. C., October 16, 1953.

Maj. Gen. S. D. STURGIS, Jr.,
Chief of Engineers, United States Department of the Army,
Washington, D. C.

DEAR GENERAL STURGIS: This refers to the Corps of Engineers' project for the canalization of the Green River in Kentucky in which the Commission has previously expressed an interest. With the understanding that this has recently been established as an approved project, we are writing to point out the substantial savings which it will make available to the Commission through the application of the fuel clauses in existing contracts with power suppliers and to call attention again to the importance of the early completion of the contemplated work.

The Ohio Valley Electric Corp., the power supplier for our Portsmouth plant, has coal contracts for 1,780,000 (plus or minus 10 percent) tons per year which can be supplied from the Green River area provided the canalization project is undertaken promptly. These coal contracts, with first deliveries in early 1956, can provide savings to the Commission of more than $8,500,000 during their 15-year term. Under their terms, the corporation must elect prior to August 1, 1954 to authorize the coal suppliers to develop: (1) The Green River coal source of supply or (2) a more expensive alternate source in Indiana. The Green River coal source will not be developed unless the canalization project is undertaken It will then be necessary to develop the alternate source in which case the $8,500,000 savings to the Commission will be lost.

The Tennessee Valley Authority estimates it will purchase annually at least 3 million tons of Green River area coal over the life of the project at a savings of approximately 30 cents per ton if navigation is improved. While some of this coal will be consumed in producing power for other TVA customers, the favorable location of the TVA Shawnee plant on the Ohio River indicates that a large portion of this coal will be consumed in that plant with 80 percent of its power output going to the AEC Paducah facilities. Therefore, a large portion of the $900,000 per year savings to TVA from the Green River canalization will be passed on to the Commission in the form of lower cost electric power.

Accordingly, it is in the Commission's interest that the Green River canalization project be fully approved and authorized for construction prior to August 1, 1954, and that it be completed early in 1956 in order to secure the maximum savings which can be realized under the Commission's contracts with the Ohio Valley Electric Corp., and the Tennessee Valley Authority.

Please let us hear from you if we can supply additional information or be of further assistance.

Sincerely yours,

LEWIS L. STRAUSS, *Chairman.*

Mr. DAVIS. Can we secure the absolute figures with respect to the transportation by water and the transportation by land, or other means, on which this 40-cent differential in the case of the Atomic Energy Commission and the 30-cent differential with respect to TVA is based?

Colonel DIXON. I believe that information can be furnished.

Mr. DAVIS. If it can be obtained, we will ask that it be placed in the record at this point.

(The information requested is as follows:)

Green River locks and dams 1 and 2, Kentucky

Plant	Status of operation	Transportation rate per ton		
		Existing means		Proposed from Green River, all water
		All rail	Rail-water	
Shawnee, Ky. (TVA)	Partial operation	$1.28		$1.01
Johnsonville, Tenn. (TVA)	Full operation		$1.64	1.28
Colbert, Ala. (TVA)	Under construction		2.02	1.71
Madison, Ind. (plant of Ohio Valley Electric Co.).	do		1.95	1.54

Mr. DAVIS. You mention the Shawnee project, which, Mr. Strauss mentioned in his letter. They would rely very heavily on this waterway for the shipment of coal to them. Are there other TVA plants in the area that you know of that would use this waterway for coal shipments?

Colonel DIXON. There are others, sir; but I do not have the location of them.

Mr. DAVIS. If there are others that would rely heavily upon this waterway for coal shipments, would you see if you could obtain the location of those facilities and put those in the record at this point to help us gage the volume of the traffic to which this 30-cent differential might apply in the case of TVA?

Colonel DIXON. Yes, sir.

(The information requested appears above.)

Mr. DAVIS. You indicated here a desire to have $800,000 for construction in fiscal year 1954.

How ready are you to proceed with construction if those funds were to be made available in this fiscal year?

Colonel DIXON. The plans and specifications will be ready to advertise on or about the 1st of March for lock and dam No. 1, and we will follow up with lock and dam No. 2 on which we hope to make an award on the 15th of June.

Mr. DAVIS. You show no previous appropriation for planning on this project. What funds did you use for the planning?

Colonel DIXON. We used operation and maintenance funds and the rest of the planning will be carried out under this $800,000 if we get it soon enough. We will have to make other arrangements if that does not come through in time.

General CHORPENING. We received authorization last year, when this was discussed, to use $100,000 of funds available to us for going ahead with the planning.

Mr. DAVIS. This project has been taken off the shelf and expedited considerably, primarily, because of its significance as a supplier for the Atomic Energy Commission?

General CHORPENING. That is correct, sir.

Mr. HAND. The project itself has been authorized since 1909, and I take it that it has been in existence for a long period of years as a navigation project based on a 5.5 foot depth; is that correct?

General CHORPENING. That is correct, the project has been in operation for many decades.

Mr. HAND. Is traffic now moving on that river?

General CHORPENING. There is some traffic.

Colonel DIXON. In the upper reaches of the river above this section, we are considering the project to be in an inactive category at the present time. That is to say, there is practically no traffic on that reach. There is, however, a limited amount of traffic in the reach below Green River lock and dam No. 2.

Mr. HAND. But it is almost inactive, I suppose?

Colonel DIXON. Yes, sir.

Mr. HAND. Is there any coal moving on it?

Colonel DIXON. There is some petroleum, but the coalfields have not yet been developed.

Mr. HAND. These coalfields we are talking about are undeveloped coalfields at the present time?

Colonel DIXON. That is my understanding; yes, sir.

Mr. HAND. Do you have any indication or information as to who owns these fields?

Colonel DIXON. No, sir; I do not.

Mr. HAND. You have had no money or spent no money on this present improvement project, as I understand it, except planning funds which you mentioned.

General CHORPENING. That is correct. Of course, some time away back some of these locks and dams were built by local interests and were later taken over as Federal projects. Since that time, Federal maintenance funds have been expended through the years on the waterway.

Colonel DIXON. Lock No. 1 was built in 1835, and lock No. 2 was built in 1895.

Mr. HAND. Do you have any figures to indicate the annual amount of maintenance funds spent by the Federal Government for the last 5 years?

Colonel DIXON. Not available with me at this time. I can supply that for the record.

General CHORPENING. A very nominal amount for the locks and dams, I will assure you.

(The information requested is as follows:)

OPERATION AND MAINTENANCE COSTS

Entire project for Green, Barren, and Nolin Rivers, Ky

Fiscal year:	
1953	$106,827
1952	133,491
1951	108,057
1950	183,478
1949	116,650

Existing locks and dams 1 and 2, Green River

Fiscal year	Lock and dam No. 1	Lock and dam No. 2
1953	8,994	17,066
1952	22,288	24,445
1951	11,169	23,003
1950	15,115	54,154
1949	19,511	16,604

Mr. HAND. General, how do you arrive at the distinction between the 1.7 figure on the channel and the 1.5 figure of the lock?

For the purposes we are now discussing, neither would have much benefit without the other; would they?

General CHORPENING. Yes; without deepening the channel you could navigate with reduced loads. By deepening the channel, however, you enable the carriers to load their barges to full capacity, thereby getting this additional benefit which accounts for the 1.7 to 1 ratio.

Mr. HAND. You can navigate up to the existing locks, I suppose, although they are old and antiquated and comparatively obsolete?

Colonel DIXON. As I recall it, one has depth over the lock sill of 5.5 feet, and the other has about 6 feet.

General CHORPENING. That definitely limits the depth of the barge.

Colonel DIXON. One lock is 139 feet long, and the other is 141 feet long.

Mr. HAND. Is it fair to say, so far as our present planning is concerned, that the use of this improved facility at a cost of $14 million would be largely to supply two agencies of the Federal Government, one, the Atomic Energy Commission and the other the Tennessee Valley Authority?

General CHORPENING. That is the basis on which we are justifying this construction. I have no doubt that there will be other uses developed for the coal that is produced up there. I understand that the coal is of very high quality.

Mr. HAND. What is the extent of your information as to whether these coal fields will be developed, and there will be a reserve quantity of coal in them as well as a good quality which you mentioned?

General CHORPENING. The source of our information generally is from the Atomic Energy Commission as contained in the letter that we have read. We must assume that Mr. Strauss and his people in the Atomic Energy Commission have made that survey.

No doubt we have done something on it, too, but we would principally rely on them.

Colonel DIXON. Of course, there will be a firm contract if it looks like this project is going ahead. The contract for 1,780,000 tons is for a 15-year period.

Mr. HAND. Do you know with whom that contract is placed?

Colonel DIXON. I will have to supply that for the record.

(The information requested is as follows:)

The coal suppliers will be Southern Coal Co., Inc., Chicago, Ill., and Sinclair Coal Co., Chicago, Ill.

Mr. HAND. How far are these coal deposits on the Green River which are sought to be used, from the actual location of the atomic energy plant at Portsmouth, Ohio?

Colonel DIXON. I am informed, sir, that it is roughly 300 miles.

Mr. HAND. Do you have information as to the nearness and availability of other presently developed coal fields?

Colonel DIXON. One of the alternate sources would have been Indiana—the coal fields in Indiana.

Mr. HAND. You do not know approximately how far they are from Portsmouth?

Colonel DIXON. No, sir; I do not.

Mr. HAND. Can you supply us with information as to the availability of presently developed coal fields adjacent to Portsmouth?

Colonel DIXON. Yes, sir.

(This information will be found on p. 830.)

Mr. HAND. Does the Atomic Energy Commission at Portsmouth have any other sources of electric power?

Colonel DIXON. I think that the demand of the Atomic Energy Commission installation is so great that this specific steam-electric plant is being built to supply this installation.

Mr. HAND. Is there any hydroelectric power at or near Portsmouth?

Colonel DIXON. Not available in the quantity they will require.

General CHORPENING. I think in that vicinity there is very little hydroelectric power. It is not in an area where there would normally be hydroelectric power.

Mr. HAND. I wonder why the Atomic Energy Commission saw fit to locate their plant at Portsmouth?

General CHORPENING. I do not know the reason behind the location of the plant there, sir.

Mr. HAND. What they have done on the surface, so far as I have learned, and I am just seeking to learn now in these questions, is that they have built a plant which, of course, they knew would be using huge amounts of power, 200 miles from an undeveloped coalfield where we will have to spend $14 million in order to make the coal available to them.

General CHORPENING. I think in locating the plant—and after all, I do not have access to, and should not have access to the plans of the Atomic Energy Commission—but I think they satisfied themselves that within the area there was plenty of coal available. In going into it further, they have come to the concluison, which they support strongly in their letter, that this would be a cheaper source than any other they had previously considered.

I also think that probably one of the reasons why they located the atomic-energy plant at Portsmouth was the proximity and availability of large quantities of water. Generally, large quantities of water are required for these atomic-energy plants. I think that was a big consideration.

Mr. HAND. If the river is not deep and, therefore, the supply might be inadequate, it might have been well if they had built right on the banks of the Green River instead of in Portsmouth, Ohio.

General CHORPENING. I doubt if sufficient water would be available up there, but I am conjecturing now, sir. It involves a matter of the requirements for land, and many other factors which must be given consideration in selecting where you will build those plants.

I am advised that the Federal expenditures there will run up into a tremendous amount.

Mr. HAND. It would be very interesting to hear from the Atomic Energy Commission as to what led them to believe the location at Portsmouth was better and then later think about this undeveloped coalfield on the Green River. What is TVA going to do with all this coal? Are they operating a large number of steam plants now?

General CHORPENING. The TVA has quite a considerable program of steam plants under construction to firm up the hydroelectric plants previously constructed. Some of those hydroplants we have been building and placing on the line, feed power into the TVA pool, such as Center Hill, Wolf Creek, and Dale Hollow. Also, there are others in our program such as Old Hickory and Cheatham on the Cumberland River, which power will most likely go to the TVA.

Mr. CEDERBERG. Is there any opposition to this project that you know of by other transportation facilities such as the railroads?

General CHORPENING. I have not heard of any opposition being voiced to this project from any other business interest or individual. Have you heard of any such opposition, Colonel Dixon?

Colonel DIXON. No, sir; we have received no objections.

Mr. CEDERBERG. Some of this coal is projected for use in TVA steam plants that are not even under construction; is that right?

General CHORPENING. I am not advised on the present status of these specific plants. I do know that they do have a steam plant program, some of which are under construction. Maybe some are now in operation, but as to the specific plants, I do not know. We can obtain that information for the record.

Colonel DIXON. The Shawnee plant was mentioned in the letter from Mr. Strauss, and it is in operation.

PORTLAND HARBOR, MAINE

Date	Unobligated balance	Unexpended balance
June 30, 1953	$90,000	$90,000
Dec. 31, 1953	90,000	90,000
June 30, 1954 (estimated)	90,000	90,000

Statement of average annual benefits

Navigation: Elimination of navigation hazards (not susceptible to monetary evaluation).

Data on continuing contracts	*Estimated contract earnings*
Continuing contracts in force	None
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955: Dredging House Island anchorage	$1,298,000

Mr. RABAUT. We now turn to page 127 of the justifications where we have the Portland Harbor, Maine, project.

This is a Federal project, with a total estimated cost of $4,825,400.

The appropriations to June 30, 1953, were $3,350,400; the total appropriations to date are $3,350,400.

The appropriation request for fiscal 1955 is $675,000.

I note that the status of this appropriation is 68 percent completed. I note further that 85 percent of the commerce passing through the port and harbor consists of petroleum products and that it is the terminus of the pipeline to Montreal. The need for the project is greatly dependent upon the severity of the winters.

The money is to be used for a 35-foot anchorage.

Would you give us further justification in regard to this project?

General CHORPENING. I first want to mention that this is listed as one of the new starts. However, this is a harbor that has been in existence for a long time, and on which the earlier work was done many, many years ago.

The work proposed at this time was authorized more recently and is considered, therefore, to be a new start.

Colonel Dixon, will you proceed on the justifications, please?

Colonel DIXON. In this request for appropriations in the amount of $675,000, we are referring to one specific item, and that is the 35-foot House Island anchorage outside the port of Portland.

Much work has been done on the project, but we are talking about this specific item. If the appropriation is granted, we would award one continuing contract some time in November of this year, and complete the project with money to be appropriated next year. In other words, the total cost of this anchorage would be $1,475,000. That is the only feature of this project under discussion at this time.

Mr. RABAUT. The reason for the anchorage is to avoid the hazards in the channel?

Colonel DIXON. Yes, sir; that is essentially it, sir, because the harbor does have a great amount of traffic, and there is no suitable anchorage, they have to tie up in the main channel. Because of the nature of the product that they haul and the size of the vessels involved it is a real hazard.

Mr. RABAUT. I note further that the vessel traffic has more than doubled since the authorized project study.

Colonel DIXON. Yes, sir. The traffic has doubled.

Mr. HAND. There is a little, tiny piece of work here in addition to that. Is there not a couple of pieces of hard material that you have to take out of the harbor?

Colonel DIXON. Yes, sir; we had $90,000 which we have been holding to take care of that work, and because of the size of it, we did not propose to go into it until this anchorage work was under way.

Mr. HAND. In the present appropriation the only work is this anchorage?

Colonel DIXON. Yes, sir; that is right, and the other will be this $90,000 which we are holding.

General CHORPENING. That was from some earlier appropriation, and we did not do it because it was not economical to go in to take out that hard material for such a small amount. It would have been quite exorbitant in cost by going in at that time.

Now, we will accomplish it along with this work, if approved by the Congress.

Mr. HAND. I seem to recall some testimony last year that there was a considerable piling up of deep-draft vessels here which made this anchorage necessary if they were to be accommodated with safety?

General CHORPENING. That is correct, sir. It is a hazardous situation and as you know, sir, in recent weeks, we have had some collisions in other waterways. It could be quite disastrous if that occurred here.

This is a safety proposition, and it is badly needed.

Mr. DAVIS. Can you give us an idea of the frequency of the 30-foot draft vessels used in this harbor?

Colonel DIXON. In 1952 there were 474 trips of vessels drawing 30 feet or more.

Mr. DAVIS. In the status of funds and based on reports which have been furnished to us, it shows there a static amount of $90,000 which has been allocated to this project, evidently for some period of time.

Is that simply some funds left over from previous work on this project that has been held here until such time as there were other funds appropriated to proceed with this phase of the project?

General CHORPENING. That is correct, sir. That is what I was referring to a few minutes ago when I said that to go in with that $90,000 to do these two small pieces of work would be quite expensive, and we have held it and will do it with this other work. We feel in so doing we will save money for the Government.

Mr. DAVIS. You would anticipate that by getting this dredging pretty well under way in the 1955 fiscal year that you would be able to complete the project in the 1956 fiscal year?

General CHORPENING. That is correct, sir. We would enter into a continuing contract for the work.

DULUTH-SUPERIOR HARBOR, MINN. AND WIS.

No construction funds available.

Statement of average annual benefits

Navigation: Savings in transportation costs	$49,300
Average annual charges	22,050

Data on continuing contracts

	Estimated contract earnings
Continuing contracts in force	None
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955: Deepen Superior Front Channel	$578,700

Mr. DAVIS. The next project is the Duluth-Superior Harbor, where the total estimated cost is $7,482,300.

There has been previously appropriated $6,857,300, and the requested appropriation before us is for $300,000 to bring the project to 96 percent of its completion.

There were no funds appropriated in 1954 fiscal year.

Will you tell us when funds were last appropriated for this project?

General CHORPENING. Quite some time ago. The amount that is included in here is a request for appropriations for the work which was authorized by Public Law 568 of the 82d Congress, approved July 16, 1952. This is considered, therefore, to be a new start.

Mr. DAVIS. What was authorized in 1952?

Colonel DIXON. This particular feature authorized in 1952 is a connecting channel, sir, between Duluth and Superior, called the Superior Front Channel, 600 feet wide, and to be deepened from the existing 22 feet, to 25 feet.

Mr. DAVIS. What is the urgency of this project at this time?

Colonel DIXON. The deepening of this connecting channel between Duluth and Superior would permit vessels to use one or the other exit at their full depth, or draft.

Should Duluth be blocked by ice or for some other reason—even by enemy action, for that matter—the Superior Harbor could be used interchangeably.

Our calculations indicate that for an average of 12 days a year conditions exist where one or the other harbor is blocked, and the justification for this project is based on that specific point.

Mr. DAVIS. Your plans, I take it, are to initiate this project in the 1955 fiscal year, and complete it in the 1956 fiscal year; is that correct?

Colonel DIXON. Yes, sir. The total estimate for this feature that we are now talking about is $625,000. The $300,000 would initiate dredging and we would need $325,000 to complete it.

Mr. DAVIS. What responsibilities do the local interests have with respect to this improvement?

Colonel DIXON. The normal responsibilities in a project of this nature. That is, to furnish lands, easement rights of way, and holding and saving the Government free from any damages.

Mr. DAVIS. Are you satisfied with the cooperation of the local interests with respect to this project?

Colonel DIXON. Yes, sir; they have provided all the assurances required under the law, and have furnished them as of the 18th of August, 1953.

Mr. DAVIS. The 25-foot depth will handle the overwhelming percentage of the ore barges, or the ore ships which constitute a major portion of the commerce involved; will it not?

Colonel DIXON. That is correct.

Mr. DAVIS. What is the average tonnage of the Duluth-Superior Harbor?

Colonel DIXON. It has an average commercial tonnage of 65 million tons for the past 10 years.

Mr. DAVIS. I note that this project has a benefit cost ratio of well over 2 to 1.

Mr. CEDERBERG. I would like to comment that this is one of the few projects where the figures are reversed. The money requested is much less than the tonnage hauled.

Mr. RILEY. General, will the appropriations requested this year for the Duluth-Superior Harbor, enable the ships to pass all the way through when you complete that project, or will it have to wait until the second increment when that channel will be widened, before they can pass from one of the deep harbor sections to the other?

General CHORPENING. The part which we will do this year will make it usable, although, as you see from the drawing, what we are going to do is a part of the widening process, and then we will come along next year, and widen it to the full project dimensions.

Mr. RILEY. But the part that is widened this year would be used?

General CHORPENING. Yes, sir; it would be usable after this year's work is done.

TUESDAY, JANUARY 19, 1954.

ST. ANTHONY FALLS EXTENSION, MINNEAPOLIS, MINN.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$1,170,421	$1,844,142
Dec. 31, 1953	290,606	684,751
June 30, 1954 (estimated)	150,000	288,100

Statement of average annual benefits

Navigation: Average annual savings in transportation costs on the estimated median commerce during the 50-year economic life of the project	$18,600,000
Average annual charges	12,720,000

Data on continuing contracts	*Estimated contract earnings*
Continuing contracts in force: Locks, dams, and appurtenances	$7,401,000
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955	None

NOTE.—Benefits and annual charges are for the entire project "Mississippi River between Missouri River and Minneapolis, Minn.," including lock No. 19 and St. Anthony Falls which are integral parts of the project.

Mr. DAVIS. The subcommittee will resume this morning with another navigation project, the St. Anthony Falls extension, in the vicinity of Minneapolis, where the total estimated project cost is $29,795,500, with an estimated local contribution of $1,100,000, making the total estimated Federal cost $28,695,500.

The appropriations to date have amounted to $7,001,800, and we have before us a request for $1,700,000.

This has been a project which has occasioned difficulty from time to time in the years that it has appeared before this subcommittee, and I understand that you have also had some unusual construction difficulties there.

Can you tell us about those difficulties, General?

General CHORPENING. Yes, sir; we have had considerable construction difficulty on this project almost from the start of construction. First, we encountered foundation conditions of severe magnitude and difficulty way beyond what had been indicated by the test borings made. These foundation difficulties occasioned greater cost in connection with the cofferdams. The nature of the sandstone there was such that we had tremendous leakage under the cofferdams, and it required sinking them deeper and putting in additional steel sheet piling.

It also required that the foundation of the dam be at a lower elevation, which required greater amounts of concrete.

Added to our foundation difficulties, both in the spring of 1951 and again in 1952, we had floods of record on the upper Mississippi River, which added greatly to the difficulties of construction. The current going by tore away more of the standstone which, of course, added to the difficulties and to the cost.

As a consequence, the cost estimate that you now have before you is considerably larger than the last time when I testified before this subcommittee, which was 2 years ago.

Mr. DAVIS. What was your cost estimate at that time?

General CHORPENING. Do you have that figure, Colonel Dixon?

Colonel DIXON. The latest estimate submitted to your committee on a 1952 price base was $26,573,800, exclusive of a local contribution of $1.1 million.

General CHORPENING. That compares, then, to the present estimated cost of $28,695,500.

The committee will recall that this project includes the construction of two locks and dams—a lower lock and dam and an upper lock and dam. The upper one will cost more than the lower one, on which construction is now under way. The general layout of the project is

shown pretty well in the little drawing at the end of the justification sheets.

Mr. DAVIS. The lower lock that we are talking about now is of no benefit to navigation of itself, then, in the absence of the upper lock?

Colonel DIXON. That is essentially correct, sir. However, if we did complete the channel between the two locks, there would be some slight benefits.

General CHORPENING. In order to get the benefit of this project—the real benefit—the upper lock must be built.

Mr. DAVIS. Has there been further uncertainty with respect to this project occasioned by the 1952 high water?

General CHORPENING. The 1952 high water did cause some damage to the St. Anthony Falls expecially to earlier works that had been built there many, many years ago. Unless some steps are taken by someone to repair that damage there is danger of rapid deterioration of the ledge of the falls.

There is at this time a resolution before the House Public Works Committee directing the Corps of Engineers to study that problem.

Mr. DAVIS. That might result in a substantial increase in the present estimated cost?

General CHORPENING. How much of an increase might be occasioned, I cannot state until we have a real opportunity to study it. That would be the purpose of the resolution—to go in there and make a detailed engineering investigation to see what would be required to effectively stop further erosion at the St. Anthony Falls.

LOCAL CONTRIBUTION

Mr. DAVIS. This $1.1 million of local contribution is for what purposes?

General CHORPENING. That $1.1 million was originally for the purpose of paying for relocations of railroad bridges and utilities. That entire sum has been turned over by the local interests to the Government.

Mr. DAVIS. Is that going to do the job?

Colonel DIXON. The present estimated Federal relocation cost for the entire project is $2,738,600. There is an additional cost of $331,900 for utilities.

The net Federal cost, taking into consideration the $1.1 million contributed by the local people, is $1,970,500.

General CHORPENING. The $1.1 million contribution was fixed in the authorization language. It was based on an estimate of the Corps of Engineers on the costs as we saw them at that time, which was, of course, quite a number of years ago.

Mr. DAVIS. We are back to that policy of fixing local contributions in terms of dollars instead of percentages, which is no longer the policy of the corps; is that correct?

General CHORPENING. That is correct, sir.

Mr. DAVIS. What is the status of your construction at that project at the present time?

Colonel DIXON. We are now working on the lower lock and dam only, sir. We have completed dredging work up to the lower lock and dam. The work underway at the present time under the major continuing contract is concentrated on the lock proper.

The 1955 appropriation would go toward the continuing contract, with the work being principally on the lock structure and on the dam.

Mr. DAVIS. Are you substantially on schedule?

Colonel DIXON. Yes, sir, the project is on schedule, considering the delay we had due to the floods.

Taking that into consideration, we are now substantially on schedule.

Mr. DAVIS. Are you pretty well satisfied that you are now completely familiar with these rather unusual foundation conditions and that you are able to cope with those conditions now in proceeding with this construction?

General CHORPENING. Yes, sir; we are. If we have any more floods of record, we are not in a position yet where that might not give us some difficulty in construction. But so far as knowing how to deal with this very difficult foundation, we do know how to cope with it now.

INADEQUACY OF HARBOR STORAGE SPACE

Mr. HAND. Do I understand, General, that the general nature of this project is because of the inadequacy of the harbor storage space below there, and you are trying to get to a pool where you have more room to expand for the Minneapolis shipping; is that right?

General CHORPENING. The original authorization for the canalization of the upper Mississippi did not extend up in front of the city of Minneapolis. Then, a review report was asked for and a study was made as to the feasibility of extending the canalization project up there, and the extension was authorized by the Congress in 1937.

I have that exact date, and it is August 26, 1937, when authorization was given to extend navigation up above St. Anthony Falls in Minneapolis.

Mr. HAND. What I am trying to get at is that in your justification there appears the language on page 139:

present harbor storage and transportation facilities are extremely inadequate under the existing situation, and are not capable of expansion in the present deep gorge; whereas above St. Anthony Falls there is ample space for harbor facilities—

and so forth.

I would like to have you expand on that a little bit for me, please, so that I can better understand the general nature of the project.

General CHORPENING. At the present time, navigation is only feasible to a point which is below the St. Anthony Falls. At that point there is not a sufficient area or pool where facilities for navigation could be as readily expanded and developed.

Mr. HAND. Is that point right at the city of Minneapolis?

General CHORPENING. The head of navigation now is in the southern part of Minneapolis.

Mr. HAND. It is right at Minneapolis?

General CHORPENING. As you know, St. Paul and Minneapolis are practically one city. It is all built up along the river and the head of navigation is at the lower edge of the corporate limits of the city of Minneapolis.

Mr. HAND. What do they have there in general? Do they have wharfage, and facilities of another nature, and if so, to what extent?

Generally, I am trying to get a picture of what the present navigation facilities are there in connection with the construction of these dams to the upper pool.

General CHORPENING. I am not too familiar with just what is presently there.

Do you have any information on that, Colonel Dixon?

Colonel DIXON. The navigation terminals have not been developed above the site of the upper lock and pool, as yet, since there is no navigation channel up that far.

Below the pool, we have transfer facilities—immediately below the city of Minneapolis—and at the head of navigation of the Mississippi River there are terminal and transfer facilities.

River commerce comes up in barges to that point, and is reloaded and moves out by truck and rail to other locations, some of which are in the higher elevations of the city of Minneapolis.

Because part of Minneapolis is very high above the navigable portion of the river—something on the order of 75 feet—you have to have a total lift of over 75 feet to get navigation to this upper area where industry is located and where the commerce could be transported directly to industrial sites, rather than going through this rehandling process.

Mr. HAND. Do I understand that the necessity for this improvement is because industry has chosen to locate above the point where the river is navigable?

Colonel DIXON. Yes, sir; and the available industrial sites are above the city of Minneapolis.

Mr. HAND. Where do they transfer cargo now?

Colonel DIXON. Just below the city of Minneapolis, or at St. Paul, sir.

General ITSCHNER. If I may say something there, the present barge terminal is just below the bridge that shows in this picture here in the map attached to the justification sheet.

Mr. HAND. It is right at Minneapolis?

General ITSCHNER. Right at Minneapolis—the lower end of it; yes, sir.

Mr. HAND. What is wrong with the facilities there now, General?

General CHORPENING. I do not think that there is anything much that is wrong with the existing facilities, except their size and it requires the unloading of barges down at the head of navigation and then moving the freight by truck or other means to get up into Minneapolis.

Colonel DIXON. Yes, sir; and in addition, the terminal facilities now existing below Minneapolis are entirely inadequate for the expanding industry, and to get to industrial sites above the falls, they have to rehandle the cargo with the available facilities. Some of the traffic, of necessity, goes directly by rail to Minneapolis from the origin point of the freight, as being the cheapest alternate, considering the fact that the freight would have to be rehandled at these small terminals—and also considering the fact that the terminal facilities are inadequate to handle the total volume of bulk commodities used at a city the size of Minneapolis.

Mr. HAND. Are the present facilities there capable of expansion?

Colonel DIXON. To a very limited extent, I understand they are not capable of expanding more than that because of the restricted area in the gorge.

Mr. HAND. How deep is the water at this point?

Colonel DIXON. Nine feet is the authorized depth of the channel. It is all barge traffic, sir.

Mr. HAND. It would continue to be if you go into the pool above there?

Colonel DIXON. The authorized depth of the channel extension is 9 feet, but there is above the falls a much larger expanse of pool available which would make a fine harbor.

Mr. HAND. Of course, if we got the cargo up to the pool above the locks and dams, you would still have to transfer the cargo to industrial plants?

Colonel DIXON. That is right; but it would be much closer.

Mr. HAND. In effect, we are saving a certain amount of trucking; is that right?

Colonel DIXON. That is right, sir.

Mr. HAND. What I am getting at is whether we are justified—and it is too late to talk about it, since it has been going on for some time—in spending $30 million to save a few miles of trucking for the city of Minneapolis and St. Paul?

This 75-foot bank that you are speaking of here, that is what you refer to in that justification as the gorge; is that right?

General CHORPENING. Yes, sir.

Mr. HAND. Does that condition exist above the locks that are proposed to be constructed?

General CHORPENING. In that area—when we get the upper locks built, I believe there is still some difference in elevation, but the gorge actually exists below the falls, and it is rather steep—whereas, after we get navigation to the upper pool there will be much better facilities for handling the cargo.

Mr. HAND. But do you still have a high bank up there?

General CHORPENING. I have never been at that spot—the exact spot upstream—so I am speaking from what I surmise, rather than what I know. I do not believe, however, that it is anywhere near as steep a bank as you have down where we are now building the lower lock and dam, and between there and the falls.

Naturally, below the falls, there would be a deeper gorge. If any of my staff have been there and can add to that more specifically, I would like to have them do so.

Colonel DIXON. Construction of the authorized project would raise river navigation about 75 feet, which is very material. There is still a bank there, but it is not a harmful bank, as I understand it; it is something on the order of 20 or 25 feet.

Mr. HAND. What is the approximate distance between the present head of navigation for the barges now, where they have to stop operating, and where they will stop after this construction is completed?

General CHORPENING. Approximately 4 miles, sir.

Mr. HAND. At the most, we are saving a distance of 4 miles in providing this length of navigation?

General CHORPENING. That is correct, sir.

Mr. HAND. At a cost of $30 million?

Colonel DIXON. Yes, sir, but we are going to go into an area where they can put in additional terminal facilities. With the project completed you could ship coal, for instance, all the way along the Ohio, up the Mississippi, and it could be handled directly at the Minneapolis industrial area. As I mentioned before,the existing transfer facilities are limited, and accordingly, the freight goes by rail or truck, rather than by direct water shipment.

Mr. HAND. In addition to the $1.7 million which you are seeking in your appropriations, are there additional funds which you propose to spend during the fiscal year 1955?

General CHORPENING. At the end of this fiscal year, the unexpended balance of Federal funds will be very low. For fiscal year 1954, there was only $400,000 appropriated .

Mr. HAND. This, roughly, then, is the amount that you propose to expend, which is $1.7 million?

General CHORPENING. That is correct, sir, with whatever small carryover there is.

Mr. RABAUT. How much of this $6,601,800 have you spent?

General CHORPENING. As of December 31 our unexpended balance was $684,000 and as of June 30, 1954. we estimate that our unexpended balance will be in the order of $290,000.

Mr. RABAUT. I think it has been sufficiently developed, so far as I am concerned.

Mr. RILEY. I note that the balance of the work contemplated in the 1955 appropriations would be in the neighborhood of $20 million. Do I understand that these facilities would not be usable until that additional $20 million is spent?

General CHORPENING. Of slight value until the upper lock and dam, as well as the lower lock and dam on which we are now working, has been completed.

The funds herein requested are only for the continuation of the construction on the lower lock and dam.

Mr. RILEY. So, we have a contingent proposition there of some $20 million before you realize the objective of this construction?

General CHORPENING. That is correct, sir.

Mr. RABAUT. Is that $20 million in addition to the $29.7 million?

General CHORPENING. No, sir; it is not in addition to that.

Mr. HAND. Where is the local contribution coming from, General?

General CHORPENING. That has all been paid, sir.

Mr. HAND. I know, but what is the source of it?

General CHORPENING. The city of Minneapolis, sir.

Mr. HAND. There has been no contribution from St. Paul?

General CHORPENING. No, sir.

Mr. HAND. St. Paul does not benefit?

General CHORPENING. No, sir.

Mr. HAND. When do you contemplate the completion of the upper dam?

General CHORPENING. We have not definitely scheduled that at this time, sir. Our 6-year plan may indicate something as to when we would probably proceed with that.

Colonel DIXON. It will be some time after 1960, sir.

NEW YORK AND NEW JERSEY CHANNELS

Date	Unobligated balance	Unexpended balance
June 30, 1953	$203,768	$203,768
Dec. 31, 1953	853,268	853,770
June 30, 1954 (estimated)	0	0

Statement of average annual benefits

Navigation: Reduction in transportation costs	$805,200
Average annual charges	572,400

Data on continuing contracts	*Estimated contract earnings*
Continuing contracts in force	None
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955: Dredging hard rock opposite Tremley Point	$1,336,000

Mr. HAND. The next project is the New York and New Jersey Channel, which is a general and continuing item, largely, I take it, General, for the continued improvement of the port of New York and the surrounding waterways.

The total estimated cost of this project is $58,678,300. The total appropriations to date are $36,762,000. The amount requested before us now for fiscal year 1955 is in the sum of $2 million, which will bring the project to a 66-percent completion, and the balance to complete is $19,916,300.

General, I assume it is correct to say that this project will never entirely be completed. There is a continuing necessity for the improvement of the waterways around the Port of New York; is that generally correct?

General CHORPENING. Of course, there have been many, many authorizations for the work in the port of New York, the latest being in the authorization act of 1950.

The figure that we gave here in regard to completion is, of course, taking into account all of the authorizations which have been made through the years.

I am sure, in answer to your question, that as the years go by, there will be additional need for some work at the port of New York, as long as there is the ever-increasing commerce there.

Mr. HAND. For what do you expect to spend this $2 million? Is this largely on the middle reach of the Arthur Kill project?

Colonel DIXON. Yes, sir; the $2 million requested is for the middle reach of the Arthur Kill.

Mr. HAND. I wish you would go ahead and explain just what this is for.

Colonel DIXON. The item we are considering in the New York-New Jersey Channels is a $20,085,000 job, and that is the major remaining work that we foresee at this time for this channel.

Appropriations for the current fiscal year are $800,000, with which we will initiate a lump-sum contract for removing some of the overburden in this particular region.

Mr. HAND. Will you state just what you mean by "overburden"?

Colonel DIXON. Yes, sir. Overburden is the soft material that can be moved by a dredge. This middle section of Arthur Kill is char-

acterized by rock and soft material. We first remove the soft material—the overburden—to a depth of 35 feet and then remove the hard material down to 37 feet.

Mr. HAND. You contemplate undertaking the removal of both the soft material and the hard material in fiscal year 1955?

Colonel DIXON. That is right sir. Removal of the soft material will start in this fiscal year 1954 on a lump-sum contract, and with the $2 million we will initiate a continuing contract for the removal of the hard material and award another lump-sum contract for removal of overburden.

Mr. HAND. If you receive the $2 million, will that complete the work necessary in connection with the middle reach of the Arthur Kill area?

Colonel DIXON. No, sir; to complete the authorized work in middle reach will cost on the order of $20 million.

Mr. HAND. Will that all be for Arthur Kill?

Colonel DIXON. Yes sir; the estimated cost of about $20 million is all for work in the Arthur Kill. I have here the exact locations, sir, if you would like to have them.

Mr. HAND. Do I understand that as of the present all the work you are contemplating in the so-called New York and New Jersey Channels from now on is the Arthur Kill area; is that correct?

Colonel DIXON. Practically speaking, sir, that is true. If you look at your map attached to the justification there, you will see there are certain minor parts in brown on the map, you will notice which are yet to be done. There is a cutoff to be dredged at the junction with the main ship channel; there is an anchorage to be deepened at Sandy Hook; and there is some widening at the B. and O. Bridge. In addition, there is still to be considered the alteration of the B. and O. Bridge, which is not directly a part of this project.

Mr. HAND. Before we get through with Arthur Kill we will contemplate spending about $20 million?

Colonel DIXON. That is correct, sir.

Mr. HAND. But, you do not contemplate at the present, at least, the expenditure of any further funds on the New York-New Jersey Channels except the usual maintenance and dredging?

Colonel DIXON. That is correct, sir.

TONNAGE TRAFFIC

Mr. HAND. Then, it is best to explain to us, Colonel, the navigation situation there now, with respect to Arthur Kill, and how this work that you contemplate doing on it will improve that navigation and whether the necessity for this improvement is caused exclusively by the larger draft of ships and larger ships, generally, or otherwise.

Colonel DIXON. This particular reach of Arthur Kill is the only remaining reach in the New York-New Jersey Channels that is not deepened to 35 feet. Again, referring to the map, you will see that when we complete the work to a depth of 35 feet, we will then have a 35-foot channel out to the sea.

The requirement for deepening of the channel has been brought about by deeper draft tankers. It has also a defense aspect. The New York-New Jersey Channels is an alternate channel from New York and should something unforseeable happen to the main ship channel, you do have an alternate exit around behind Staten Island.

The area around Carteret, N. J., and to a limited extent Staten Island, has developed tremendously especially during World War II, and the major oil companies have large tank farms there.

The traffic in the middle reach is extremely high. The New York-New Jersey channel handled a total tonnage in 1952 of about 74 million tons, in addition to over 16 million tons of through traffic. More than 25 percent of this tonnage originated or was destined for the middle section of the channel.

In other words, we handled in that particular area approximately 30 million tons of traffic counting the through traffic.

Mr. HAND. Then, Arthur Kill, so to speak, is the missing link on your 35-foot channel throughout all this waterway; is that approximately right?

Colonel DIXON. That is correct, sir.

Mr. HAND. The alternate route would go all the way to the sea by way of Staten Island in case New York Harbor was impaired?

Colonel DIXON. That is right, sir.

Mr. HAND. Generally speaking, what is the nature of this Federal work which will require the expenditure of the $20 million after this fiscal year?

Colonel DIXON. In fiscal year '55 we will just remove the rock in a specific area and overburden in other areas. Referring to the map, it is rock area No. 5, which will be undertaken with the request in fiscal 1955. There are several other rock areas which will have to be attacked later on.

Mr. HAND. Will all of these areas shown on the map as rock areas have to be handled?

Colonel DIXON. That is correct, sir.

Mr. HAND. What is the depth of the waterway now—the minimum depth?

Colonel DIXON. Arthur Kill is 30 feet in this section, sir.

Mr. HAND. This money is essentially to make a difference of 5 feet in depth?

Colonel DIXON. That is right, sir.

Mr. HAND. Regardless of the advantage of an extra exit, so to speak, from this waterway, does Arthur Kill now carry a significant traffic? I think that you mentioned that the percentage of traffic carried by that stretch was very high; is that right?

Colonel DIXON. Yes, sir; 73,900,000 tons of traffic originated or was destined for New York-New Jersey channels, and the through traffic amounted to 16,700,000 tons for 1952.

General CHORPENING. Twenty-five percent of that total commerce is handled in the middle section of Arthur Kill.

Mr. HAND. Is it correct to say that that is mostly petroleum?

Colonel DIXON. By and large it is petroleum; yes, sir. There is some coal, but the bulk of the traffic is petroleum.

Mr. HAND. Actually, one of the major benefits, I suppose, is for the enormous concentration of tank farms or oil storage facilities in northern New Jersey which involves the Standard Oil Co. and other companies of that sort?

Colonel DIXON. That is right, sir.

Mr. HAND. I take it, Colonel, that a great many of our tankers cannot use the Kill in the shape that it is now, but we now have the

problem of justifying the petroleum ships that are the length of 623 feet, and a beam of 84 feet, and a draft of at least 33 feet.

I suppose that we contemplate the continuance of that kind of ship construction in the future?

General CHORPENING. The trend is definitely in that direction.

Mr. HAND. Along the lines that our colleague, Mr. Rabaut, spoke of yesterday, we keep having to constantly improve the waterways because the shippers constantly increase the size of their ships.

Mr. RILEY. Is 35 feet the average depth now required for large, oceangoing vessels?

General CHORPENING. Of the type that would use this waterway here; yes, sir.

The main channel entering New York Harbor, if I recall correctly, is 45 feet. But that is to take the large liners such as the *United States*, and the *Queen Mary* and some of those.

Mr. RILEY. As my colleague so ably pointed out, this is another proposition of bigger ships and deeper channels; is that right?

General CHORPENING. Yes, sir.

Mr. RILEY. There will probably have to be some agreement somewhere along the line, or we will be going pretty deep after a while?

General CHORPENING. Well, it seems to me that we have about reached our limit, as I said yesterday. There is some limit beyond which these improvements would not be economical.

Mr. RILEY. I would like to think we have about reached it in connection with ships.

ATLANTIC INTRACOASTAL WATERWAY BETWEEN NORFOLK, VA., AND ST. JOHNS RIVER, FLA.

No construction funds available.

Statement of average annual benefits

Drainage:	
Eliminate damages caused by inadequate drainage, and by salt-water intrusion resulting from the construction of a land cut for the Intracoastal Waterway	$42,600
Average annual charges	16,250

No continuing contracts in force or proposed for fiscal years 1954 and 1955.

Mr. DAVIS. The next project before us is the Fairfield, N. C., section of the Atlantic Intracoastal Waterway, where we have a total estimated cost of $13,677,200 and, there being no local contributions involved, this represents the total cost.

There have been appropriations to date of $9,401,800.

We have before us a request for $195,000.

Am I correct in assuming that this amount before us is a one-shot proposition to handle a specific local problem?

General CHORPENING. That is correct, sir.

Mr. DAVIS. Will you tell us the nature of the problem that this is designed to correct, and what you propose to do, sir.

General CHORPENING. It has been found that since building the Intracoastal Waterway some years ago and dredging the channel through this area for the Intracoastal Waterway, that salt water intrusion was occurring on agricultural lands in this area.

As a result of a survey report, we recommended that the Federal Government, having built this waterway, should take adequate steps to restore that land to its original condition before the waterway was built.

That was authorized in 1950, and the request here for the $195,000 is to do some drainage work and to install a pump to pull that water off the land on which drainage problems have been aggravated by the construction of the Intracoastal Waterway.

Mr. DAVIS. What area of land has been affected by this salt-water intrusion?

General CHORPENING. It involves a matter of about 12,400 acres of land which will be benefited, of which 7,300 acres were in cultivation until inadequate drainage and the salt damage caused abandonment.

Mr. DAVIS. Would you tell us the relationship of this $195,000 project to the remainder of this work which appears to be of about a $4 million magnitude for this overall project in this area?

General CHORPENING. This work has no direct connection to the other items of work that are involved here. The other items that have not been completed are, in fact, construction items that were authorized incidental to this Intracoastal Waterway.

This is, as I brought out, an item where the Government has a moral responsibility to repay the citizens who were damaged by works of the Government.

Mr. DAVIS. The principle here is about the same as that down in Clinton, Iowa, where some improvements to navigation on the Mississippi raised the water level and then caused difficulties there, and we had to appropriate some funds so you could go in and clear up the local situation?

General CHORPENING. Yes, sir; it is also similar to the $70,000 item which we discussed yesterday, wherein we are in the process of determining the damages there to the citizens and trying to arrive at a capitalized amount.

Here, we have arrived at a solution and we are recommending the construction of these works.

Mr. DAVIS. The appropriation of these funds to care for the obligation of the Government involves no commitment for the $4 million of subsequent work that you have in mind in this general area?

General CHORPENING. That is correct, sir.

Colonel DIXON. Mr. Chairman, the local interests have furnished land, rights-of-way, and have done certain clearing to the amount of $19,000. They have also spent approximately $100,000 on the canals in that area.

BENEFIT-TO-COST RATIO

Mr. DAVIS. It is estimated that the benefit of this particular improvement is more than 2.5 times its cost; is that right?

General CHORPENING. The benefit-cost ratio is 2.62 to 1, sir.

SALT-WATER INTRUSION

Mr. HAND. How does this salt-water intrusion occur, General? By flooding over the banks, or otherwise?

General CHORPENING. It is occasioned by dredging the channel through the area. That brought salt water into the channel, and at a height which caused percolation and penetration into the land.

Mr. HAND. That is what I had supposed, but I notice here in your justifications that it says "flooded by salt water during the above-normal stages in the waterway."

Does that mean flooding over the banks?

General CHORPENING. Yes, sir. When wind and other conditions occur to push it up, a considerable amount of salt water goes over the bank.

Mr. HAND. Then, is it caused by percolation, or flow over the bank, or both?

General CHORPENING. It is a combination of both, sir.

Mr. HAND. How much of this has to do with the work in the general territory, and how much is to prevent the intrusion of salt water into the farmland?

Colonel DIXON. About one-third of the 7,300 acres of the damaged lands, are subject to salt-water damage. The damage to the other two-thirds of the said 7,300 acres is attributable to inadequate drainage.

Mr. HAND. Did we change the drainage situation there much when we approved this waterway?

They always had a natural waterway in there; did they not.

General CHORPENING. Not here, sir. This was a new channel.

Mr. HAND. This was a completely net cut?

General CHORPENING. Yes, sir.

Mr. HAND. You had the intrusion of salt water or the aggravation of an existing drainage condition, or the creation of a drainage condition, and could not that have been anticipated at the time this cut was made?

General CHORPENING. Perhaps it could have been, but, apparently at that time it was not considered that it would be harmful. After the canal was built, it was found, and we believed, and recommended to the Congress, that there was damage, and we thought this work should be done to correct it.

Mr. CEDERBERG. General, do you have an estimate as to the total investment that the Federal Government has in this Intracoastal Waterway from Norfolk to St. Johns River in Florida?

General CHORPENING. We have it, but I do not know whether we have it here with us, but of course we have that information available.

Mr. CEDERBERG. Will you provide that for the record, please?

What is the type of traffic that is handled on this waterway?

Colonel DIXON. We can give you the actual tonnage figures, sir.

Mr. CEDERBERG. There is a considerable amount of commerce on it?

Colonel DIXON. There is a considerable amount of traffic that uses the waterway, but we would have to get into our statistics to give you an answer. We could do it, if you desire, and put it in the record along with the total estimated cost.

Mr. CEDERBERG. That is sufficient for my purpose.

(The matters referred to follow:)

Intracoastal Waterway between Norfolk, Va., and St. Johns River, Fla.

District	Total estimated cost	Cost June 30, 1953	Tonnage 1952
Norfolk	$3,396,276	$3,396,276	[1] 52,909 [2] 926,388
Wilmington	13,677,200	9,401,800	1,414,116
Charleston	7,345,888	7,345,888	1,208,870
Savannah	763,599	763,599	542,901
Jacksonville	263,659	263,659	520,142
Total	25,446,622	21,171,222	4,665,326

[1] Via Dismal Swamp.
[2] Via Great Bridge lock.

Colonel DIXON. The tonnage handled during 1952 in this particular stretch, which is in the Wilmington district of the Corps of Engineers, was 1,414,000 tons.

Mr. CANNON. The appropriation of the money requested in this estimate, when expended, will bring this project within $195,000 of completion?

General CHORPENING. No, sir; the work that we are requesting funds for will cost $195,000. There are remaining items in the authorization which are estimated to cost $4,080,400, to complete, but this is a one-shot proposition only to take care of the situation that we have described here.

Mr. CANNON. When this money is expended as indicated, it will complete this step?

Colonel DIXON. This particular unit; yes, sir.

Mr. CANNON. That will be completed in 1955 if this money is appropriated?

Colonel DIXON. That is correct, sir.

SALT WATER DAMAGE

Mr. RABAUT. As I understand this project, General, there was a drainage area there, and when this canal was put through the salt water was permitted to go up into this drainage area, and they are asking for locks to close that off?

General CHORPENING. The proposed work consists of small dams and appurtenances and the pumping station, sir.

Mr. RABAUT. This salt water was permitted to go up into this area, and caused damage to the soil. It has been before the committee several years, but never officially on the books. It has been a project which has been complained about by Members of Congress from the area, and people from the area, and this year I see they have the item budgeted.

I have always felt that they had a justifiable claim, and I see this morning you have expressed that same idea.

There were indications at one time that permission was asked to sue the Government about this matter, and we talked them out of it, and told them that they should be a little patient, and some of these days we would get around to it. I see, now, we have finally gotten to it, and I think it is a good idea that we have gotten to it.

Mr. RILEY. General, you plan to trap this sea water that goes over, and pump it out of the basin?

Colonel DIXON. No, sir, the sea water comes from this canal cut that we made, and we will block the entrance of that sea water onto the land, but then you intercept the drainage from that land, and you have to supply a pump to take care of the drainage. You pump the fresh water ponded in the drainage area over the barrier with the pump which you put in to take care of the drainage.

Mr. HAND. What evidence do we have before us that there has been, in fact, damage to the agricultural area that has been discussed?

Has there been any communication from the State Board of Agriculture, or any persons in authority which gives competent evidence that the land is being seriously damaged?

General CHORPENING. That was included in our report to the Public Works Committee, sir, where we went into that quite thoroughly in making our survey of the damage. That could be furnished for the information of the committee.

Mr. HAND. That is available to us through the testimony before the Public Works Committee.

General CHORPENING. Yes, sir.

CLEVELAND HARBOR, OHIO

Date	Unobligated balance	Unexpended balance
June 30, 1953	$197,816	$5,486,594
December 31, 1953	337,149	5,442,300
June 30, 1954 (estimated)	30,000	4,225,100

Statement of average annual benefits

Navigation: Savings in transportation costs on bulk commodities through the use of larger and more efficient vessels	$2,551,600
Average annual charges	1,182,300

Data on continuing contracts

	Estimated contract earnings
Continuing contracts in force:	
Reconstruction:	
Bridge No. 8	1,623,000
Bridge No. 9	2,933,000
Bridge No. 1	3,282,000
Bridge No. 15	4,558,000
Bridge No. 3	2,890,000
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955	None

Mr. CEDERBERG. The next project is the Cleveland Harbor, where the total estimated Federal cost is $26,656,000 and total appropriations to date amount to $16,448,000.

The appropriation request pending before us at this time, is in the amount of $1,200,000, leaving a balance to complete of $9,008,000.

General, in discussing this particular project, would you advise us as to your current cost experience in this particular project?

General CHORPENING. Yes, sir; the committee will note that the estimated cost shown this year has increased somewhat from last year—actually, $1,263,000.

The committee will recall that the great bulk of the cost of this project is in connection with the rebuilding of railroad and other bridges which are essentially steel.

We have found that during the past year in connection with rebuilding of some of these bridges that in accordance with the cost of steel and steel construction we have had to increase the estimate accordingly.

Mr. CEDERBERG. As I understand it, the relocation cost of bridge No. 3 has been reduced by $1,150,000. Is that correct?

Colonel DIXON. Yes, sir; that is correct.

Mr. CEDERBERG. Yet, the overall cost of the overall project has increased to the figure that you have already given us.

General CHORPENING. That is correct, sir.

Mr. CEDERBERG. There has been some problem in this particular area in getting the railroad people who are involved in carrying out the construction and the changes in these bridges to carry out their work.

Have you complied with the committee's directive in this regard?

General CHORPENING. We have complied with it, and the railroad companies are now cooperating in that procedure.

Mr. CEDERBERG. You have had no further trouble in that connection?

General CHORPENING. No, sir; no further difficulties in that connection.

Mr. CEDERBERG. What is the tonnage handled by this particular harbor?

Colonel DIXON. Cleveland Harbor handled, in the year 1952, 17,955,825 tons.

Mr. CEDERBERG. Would you place in the record the ratio of benefits to cost?

General CHORPENING. The ratio of benefits to cost of this project is 2.12 to 1.

Mr. CEDERBERG. Is there anything unusual about this project or any problems which are involved which should be called to the committee's attention at this time?

General CHORPENING. No, sir; nothing beyond what was discussed last year.

Mr. CEDERBERG. What will you be spending the $1.2 million requested in 1955 for, if granted?

Colonel DIXON. We will use that money to continue work on bridges 9, 1, 15, and 3, and to dredge at bridge 9 and dredge at cut No. 10.

Mr. CEDERBERG. And, after that work is done, there is still work to be done on other bridges, and so forth, in the harbor, to bring the project to completion?

Colonel DIXON. That is correct.

Mr. CEDERBERG. What will the $1.2 million do if expended for the purpose you have described in making the harbor more efficient and more capable of receiving vessels, or does it require the completion of the entire project before the maximum benefits are to be received?

Colonel DIXON. Each particular bridge has a benefit, because one of the difficulties is time. If you improve one bridge, you save time on that particular reach of the river and, also, you remove a certain amount of hazard when you correct one of these bridges, but the maximum benefits to the whole project will not accrue until it is completed.

General CHORPENING. We have endeavored in our schedule of these to modify and correct the worst situations first, and then go along with the less severe situations as we get to them.

Mr. CEDERBERG. In your opinion, there is a very definite necessity, then, for these works to be completed as rapidly as possible?

General CHORPENING. I certainly do. I have personally been up the Cuyahoga River, and that is one of the most difficult places to navigate those ore ships that I have seen in my life.

COOPERATION WITH THE RAILROADS

Mr. DAVIS. General, last year you appeared before the committee in justification of the request for $3 million, and you will recall that our report was quite critical of the attitude of the railroads involved there in that they insisted on having the full amount of the money available before they would undertake to cooperate with you in furthering any particular portion of it.

I gathered from your testimony in response to Mr. Cederberg's questions that the action of the committee last year did have some beneficial effect in helping you to work that out so that you now are receiving complete cooperation from the railroads in that area?

General CHORPENING. That is correct, sir.

Mr. DAVIS. And this $500,000 which finally appeared in the conference report was recognized by everyone as a token of good faith on the part of this committee to indicate that we would plan to go ahead, but that we did expect the railroads to give you that cooperation as the basis for further appropriations by this committee?

General CHORPENING. Yes, sir.

Mr. DAVIS. As I understand it, primarily, the amount you are asking for at this time will permit you to proceed with the three bridges—1, 15, and 3—which you testified in support of in last year's hearings, in addition to one bridge—No. 9—which was under way at the time you testified last year?

General CHORPENING. Yes, sir.

Mr. DAVIS. Is cut No. 10 something that you have planned to get under way on which no work has been done at all?

Colonel DIXON. There has not been work done on it, sir. That is to improve a difficult situation. It involves a very small amount of money, $25,200, as I recall, at that particular location.

Mr. DAVIS. That is an upstream hazard, and by that, I mean it is beyond any of these bridges that we are talking about thus far in this project; is that correct?

General CHORPENING. That is correct. There have been a number of places in connection with this project where there has been under the authorization some easing off of certain bends and improvement of the channel to make navigation easier.

UNEXPENDED BALANCE

Mr. DAVIS. You had an unexpended fund of something over $5 million at the end of 1953 fiscal year, and what anticipation do you have with regard to reducing that unexpended balance during the fiscal year 1954?

Colonel DIXON. The unexpended balance at the end of this coming June is still going to be large; it is going to be about $4.25 million.

Mr. DAVIS. That is, you anticipate having an appropriation of $1,200,000 which would indicate that you actually planned to expend during the fiscal year 1954 about $2.5 million; is that correct?

Colonel DIXON. In the fiscal year 1954, we expect to expend about $1.7 million. The unexpended balance that will be remaining on June 30, 1954, plus the $1.2 million, a total of about $5,425,000 will be substantially expended by the end of fiscal year 1955.

General CHORPENING. It is estimated that we will have contracts underway on four of these different bridges during the fiscal year 1955.

Colonel DIXON. Work is just getting started on some of these bridges. It takes time to get started on this specialized construction.

Mr. DAVIS. The physical work itself is moving along satisfactorily at the present time?

General CHORPENING. That is right.

Colonel DIXON. I wish to call attention to the local cooperation on this project, Mr. Chairman. This is a project that has substantial expenditures on the part of the local city. They have to make necessary changes to highway bridges; they have to provide certain lands, and the railroads have to pay their proportionate share of this expense.

The cost to the city to date has been $3,900,000. We expect that they will have to spend an additional $3,475,000 for other bridges, and in addition, $1,900,000 for certain channel improvements.

They have expended $5.5 million for modernization and maintenance up to May 1938 on this particular project.

Mr. CANNON. This proposal has been before us for a number of years; has it not?

General CHORPENING. Yes.

Mr. CANNON. And from time to time we have made appropriations for it?

General CHORPENING. Yes.

Mr. CANNON. But you say now in response to questions by members of the committee that you expect to complete this project within this estimated cost?

General CHORPENING. No, we will not complete the work, all of the work. There is still required, after this fiscal year, $9,008,000.

Mr. CANNON. When would it be complete, with that appropriation?

General CHORPENING. The schedule of completion is at the end of the fiscal year 1958.

Mr. CANNON. Would that complete it? It seems to me that you would complete merely one phase of it. Do you mean that there would not be another phase of it?

General CHORPENING. No; this will complete all of the authorized works on this project.

Mr. CANNON. There will be no further funds requested for this project?

General CHORPENING. Not under this authorization, no.

REPLACEMENT OF BRIDGES

Mr. RABAUT. A glance at this map in the justifications gives the committee an idea of the conditions on the Cuyahoga River. There are 27 different sorts of projects mentioned here, at Cleveland, Ohio, taking place under this appropriation on this river.

I notice there is a project providing for the replacement of six obstructive railroad bridges across the river. When you say replacement does that mean a complete rebuilding of those bridges, or are you going to move them?

General CHORPENING. No, sir. Each bridge has to have different treatment, depending upon the piers actually existing before, and whether they should be changed, and how much they should be raised, how old the bridge is and the nature of the original construction.

Mr. RABAUT. Yes.

General CHORPENING. And all this enters into the determination of what the Federal Government pays, and what the railway pays which is on a formula established by the Congress in the Truman-Hobbs Act.

Mr. RABAUT. For the record tell us what that formula provides?

Colonel DIXON. The general principle followed is that where a bridge has been declared, by the Secretary of the Army, as an obstruction to navigation, the Federal Government then will go in and contribute to the expense of a replacement only to the extent to avoid the obstruction to navigation. Now when you consider that a bridge, a railroad bridge, might have a life possibly of a hundred years, we take that into consideration in building the new bridge. In other words, the railroad is going to have a new bridge that will last that much longer. We take that into consideration in working out the formula.

Mr. RABAUT. Those are flexible arrangements that you will work out under the provisions of the law.

General CHORPENING. Yes, sir.

Mr. RABAUT. Depending upon the age of the bridge, and the reason why it is disturbed, and all of that.

General CHORPENING. Yes.

Mr. RABAUT. I notice here you have got bridges 25 and 8, those are 2, pretty well along. Then you have got bridge 9 only 17 percent completed and bridge 1, I think, is only about 2 percent complete. Is that right?

Colonel DIXON. On bridge 1 construction was initiated in September 1953 and is about 2 percent complete.

Mr. RABAUT. Do you expect to have all of this work done when did you say; 1958?

Colonel DIXON. That is correct. These are separate items that will continue at the same time. In other words, this fiscal year, 1955, we are asking $1,200,000 and we will be working on bridges 9, 1, 15, and 3, and doing certain incidental work.

Mr. RABAUT. Now in handling these projects, are you using bridge machinery to lift the bridges, as they did when they took these boats up the Chicago canal?

General CHORPENING. I am not familiar with the exact construction procedure being used, but I think it will vary with each one of these bridges, Mr. Rabaut. The railroads are actually making these contracts themselves.

Mr. RABAUT. The railroads are?

General CHORPENING. Yes; the railroads are making the contracts themselves, and they are working with us on the amounts, and you can see that this would be desirable so that the rail traffic can go ahead.

Mr. RABAUT. What about the other bridges, the bridges in the city?

General CHORPENING. The highway bridges?

Mr. RABAUT. Yes.

General CHORPENING. The city is doing that themselves. That is a city requirement with respect to taking care of their own bridges. The Federal Government is not paying for that work on the highway bridges.

Mr. RABAUT. We are making no contribution at all to the city?

General CHORPENING. No; that is the city's requirement and it is being done by the city.

SCHUYLKILL RIVER ABOVE FAIRMOUNT DAM, PA.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$578,650	$2,078,059
Dec. 31, 1953	1,078,287	2,278,312
June 30, 1954 (estimated)	0	1,108,900

Statement of average annual benefits

Navigation: Reduction in the amount of dredging required each year in maintaining adequate navigation channels in the Schuylkill and Delaware Rivers, elimination of delays to navigation caused by sudden filling of channel with culm during freshets, and elimination of turbid condition of the water which adversely affects the equipment of vessels	$472,000
Flood control: Restoration of river's hydraulic capacity and reduction of crests of flood	390,000
Total annual benefits	862,000
Average annual charges	291,000

Data on continuing contracts	*Estimated contract earnings*
Continuing contracts in force: Dredging Fairmount Pool	$3,150,900
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955	None

Mr. RILEY. The next project is Schuylkill River, above Fairmount Dam, Pa. I note the total estimated Federal cost is $4,589,000; the appropriations to date have been $3,794,000, and you are asking us now for $795,000 which will complete the estimated work.

Have all the appropriations made been expended, General Chorpening?

General CHORPENING. We had as of December 31 an unexpended balance of $2,278,000. It is estimated that by June 30 that unexpended balance will have been reduced to $1,108,000; all of which will be under contract.

Mr. RILEY. Including the present request?

General CHORPENING. Yes; I think that is a continuing contract.

Colonel DIXON. Yes, sir. It will be a continuing contract.

Mr. RILEY. In other words, you can assure the committee that all of the money, including the $2,278,000 and the $795,000 will all be under contract during the fiscal year 1955?

General CHORPENING. Under contract, and we expect that this contract will have been entirely completed by the end of the fiscal year 1955.

Mr. RILEY. I note that for 1952 the estimated cost was $12,574,000, and you have cut that down to $4,585,300. That is about one-third of the original estimated cost. Will you explain to the committee that decrease?

General CHORPENING. Yes, sir. May I point out to the committee that the original estimate of the Federal cost of this project in 1944 was $12,895,000. The estimated cost last year, as stated, was $12,574,000. This year we have reduced that estimated cost to $4,589,000. It is an exception that so much reduction could be made, but here is what has happened in connection with this project, gentlemen.

This is a cooperative project with the State of Pennsylvania. The State has expended in the neighborhood of $35 million on their part of the project, which consists of closing off old mine shafts where culm was feeding into the river, and doing a lot of other work. And, they have proceeded with that, and that has had the effect, along with some half dozens freshets or floods in the river, to tremendously reduce the amount of culm in the river that originally we thought would have to be removed by dredging. Now we had an inkling of that last year, but we did not have sufficient data to enable us to firm up our own estimates. Now, during the past year, we have done that and we now know that this is the requirement for the Federal Government's portion of this project.

We are very happy to be able to show that reduction in Federal cost. And, credit is due to the State of Pennsylvania for having proceeded so vigorously on their part of the program.

CULM DEPOSITS

Mr. RILEY. General Chorpening, for the record, will you tell us the meaning of the term "culm"?

General CHORPENING. Culm is a finely divided coal waste, from the coal mining operations that have been carried on in the Schuylkill River and upstream for a hundred years or more. That has come on down and gotten into the river channels and clogged them up.

Mr. RILEY. It solidifies when it hits the obstruction?

General CHORPENING. It solidifies somewhat, and it greatly increases the maintenance problem up and down the river. It also has been undesirable from the standpoint of stream pollution as well.

Mr. RILEY. As I understand it, the State of Pennsylvania has expended considerable money in blocking off these deposits from the streams coming into the Schuylkill River, and for that reason you do not have the accumulations that you have had heretofore, and then the floods, you said, have washed some of it away as well. You think the State of Pennsylvania has blocked off to the extent you will not have to continue these dredging operations that you have had to carry on heretofore?

General CHORPENING. We think, due to this whole project, the activity that we have carried out, plus what Pennsylvania has done, that it is going to be helpful in the annual maintenance charges in the waterways going on down to the sea.

Mr. RILEY. You think you will have to continue those operations, but you do not think they will be as extensive as they have been heretofore?

General CHORPENING. That is right. I might state that our estimate on the savings to the Federal Government in dredging is $250,000 annually.

Mr. RILEY. That is a pretty good investment.

General CHORPENING. It is a very good investment.

Mr. DAVIS. Was there no way that you could have anticipated these conditions that have been corrected within the last year, at the time this project was originally planned and when the planning report was made on it?

General CHORPENING. I would not say, sir, there was no way that we could anticipate it. Of course, a study was made 10, 12, or 15 years ago. Now another matter was, as I say, a matter of timing, how fast the State would go along, and how fast would they be able to proceed with their part of the work. It is quite a difficult thing to estimate, and our reporting officers, keeping that in mind, leaned toward the side of conservatism, which was on the side of a higher cost estimate.

Mr. DAVIS. Representatives of the State of Pennsylvania are satisfied that this $795,000 worth of work that is contemplated here, finishes the job from their point of view as well as the point of view of the Federal Government?

General CHORPENING. Yes, sir.

Mr. RABAUT. This culm results from some of the open mining that was done years ago, does it not, up and down the stream?

General CHORPENING. That is right, sir.

Mr. RABAUT. I understand that now they require, that when they have this open mining of any kind, they have to build levees so that it cannot get into the river.

General CHORPENING. It cannot be deposited into the stream.

Mr. RABAUT. In other words, they have corrected the situation so it cannot get into the stream. That is with some of the money that was spent by the State, you say they have put up about $35 million. I think this is a good project, to get this out of the stream. And, you say this completes it?

General CHORPENING. Yes, sir.

Mr. DAVIS. You have an item of about one-quarter of a million, included in that $4,589,000 for contingencies, and I wonder whether that has now been written off in view of the fact you do have a continuing contract to finish this job up.

General CHORPENING. I would have to look into that. Of course, in our contract estimate of the yardage that would have to be removed requires some flexibility. I think it would be unwise at this stage, where we still do have $2 million worth of work to do, to close out that contingency item. If we can do the work without it, it will simply be a saving. And you will recall last year that we had about $13 million in savings which we could show on some projects which we could apply to others.

It is never too good to cut the contingency figure at this stage of the game, a year or a year and a half before we complete the contract. We must be flexible, and in cutting out all contingency funds we might find ourselves in a predicament where we would have to come back to get additional money.

PORT ARANSAS-CORPUS CHRISTI WATERWAY, TEX.

No construction funds available.

Statement of average annual benefits

Navigation: Savings in transportation costs by use of larger and more efficient vessels	$138,000
Average annual charges	97,400

No continuing contracts in force or proposed for fiscal years 1954 and 1955.

Mr. RABAUT. The next project is Port Aransas-Corpus Christi Waterway, Tex., with a total estimated Federal cost of $9,873,600, for which we find a local participation or contribution of $216,400, making the estimated Federal cost, $9,657,200.

The appropriations to date have been $5,976,000, and the requested amount for the fiscal year 1955 is a half million dollars.

The project is 62 percent complete.

Will you tell the committee what you are going to do with the funds requested for 1955?

Colonel DIXON. The funds we are requesting, sir, the $500,000, will be applied to specific items on the Port Aransas-Corpus Christi Waterway, particularly the Tule Lake extension to the contemplated depth of 34 feet.

The total Federal cost of this particular item, including some turning-basin work which will be done at a later time, is $1,203,000. The work now under consideration has a total cost of $1,089,000, and the first appropriation for this is the $500,000 we are requesting, which will initiate the deepening of that channel to 34 feet.

The channel is 4.2 miles long and this will do about 2 miles of the work. There will remain about 2.2 miles to be completed.

Mr. RABAUT. I notice here in the justification the statement that the tonnage moving over this water in 1952 was 23,800,000. Most of that consists of what?

Colonel DIXON. A great deal of it is petroleum products. There is also in the overall picture of Port Aransas, an aluminum plant, and there are other products, such as molasses-sugar, and zinc from plants located along the Tule Lake extension. Most of the tonnage moving over the waterway in 1952 was composed of petroleum products.

Mr. RABAUT. I notice too that there is a 34-foot channel to the Suntide refinery planned for fiscal year 1956.

Colonel DIXON. Yes, sir; that is on the Tule Lake extension which will not be completed with the $500,000. An additional $589,000 will bring it up to Tule Lake.

LOCAL CONTRIBUTION

Mr. RABAUT. Is that where these contributions are coming from, the local contribution?

Colonel DIXON. The local contributions are made by the Nueces Navigation District at Corpus Christi.

Mr. RABAUT. How much of this requested half million dollars is required for this work?

Colonel DIXON. The half million is required to initiate this work. There will remain a balance of another $589,000 to complete the Tule Lake Channel extension.

Mr. RABAUT. Is it customary to spend this much money to go to the benefit of a single industry?

Colonel DIXON. No; but there is more involved than a single industry located along this channel.

Mr. RABAUT. I was referring to this one.

Colonel DIXON. Along this specific channel reach we are discussing today, we have the Suntide Refining Co.; we also have the American Smelter & Refining Co., which processes zinc, the zinc coming in from Africa, and other locations, and we have the Corn Products Refining Co. turning out molasses and other products; and we have the Phoenix Refining Co. Other industries along the canal are the American Cyanimide Co., Cargill, Inc., Heldenfels Bros., and Fordyce Gravel Co., distributors of shell, gravel, and building materials.

Mr. RABAUT. All of these industries will be benefited by this expenditure?

Colonel DIXON. Yes, sir; there is considerable development going on at Corpus Christi, in the way of chemical products, and the American Cyanimide Co. is building a considerable plant. The benefits are rather widespread, not limited specifically to one industry.

Mr. DAVIS. This $1 million plus that you mentioned with respect to the Tule Lake portion, and further on, and the additional work is that you have shown in brown on the chart that you have presented to us?

Colonel DIXON. That is correct. The benefit-cost ratio of the 34-foot Tule Lake extension is 1.4 to 1. The brown shown on that chart represents the deepening, the eventual deepening of the overall project to 36 feet.

Mr. DAVIS. What is the rationale of this particular place here for the beginning of this deeper project, which evidently is going to be necessary all the way over from this bayou?

Colonel DIXON. The part indicated in brown on the chart is today 34 feet except for the Tule Lake extension. The Tule Lake extension that we are considering will make that extension equivalent in depth to the rest of the channel that goes out to the gulf as it is today.

Mr. RABAUT. May I ask you what the status of the local contribution is at the present time?

Colonel DIXON. That is in good shape, sir.

Mr. RABAUT. What do you mean, that it is good?

Colonel DIXON. We have the assurance of the local people.

Mr. RABAUT. Assurance.

Colonel DIXON. The assurance for their part of the project. In other words, they are furnishing easements, land, and so forth, but in addition to that the local interests have dredged the Tule Lake extension to a depth of 18 feet, for certain portions of it.

Mr. RABAUT. Is the land and so on considered a part of this $216,400?

Colonel DIXON. No, sir.

Mr. RABAUT. Is it money?

Colonel DIXON. That was put up for dredging the Tule Lake extension to partial dimensions.

Mr. RABAUT. The $216,400 fund related to the items referred to in this year's estimate?

General CHORPENING. The contribution for the entire project—that is, the total estimated cost of local work is about $15 million.

Mr. RABAUT. You say it is in good shape, but you do not state what it is.

Colonel DIXON. We have already spent on this overall project the amount of $5,976,000, which is not related to this Tule Lake expenditure. The local contribution of $216,400 has been used to dredge the channel extension to partial dimensions.

Mr. RABAUT. Very well.

Colonel DIXON. Of course we have the assurance from the local people that they will meet their obligation for their part of this expenditure by furnishing disposal area and lands.

Mr. RABAUT. When was the last time you had an appropriation for this overall project?

General CHORPENING. It was some years ago, I believe.

Mr. RABAUT. When you mentioned the 1948 act, was that at the time that this particular Tule Lake project was authorized to a 36-foot depth, or what was done in that?

Colonel DIXON. In the 1938 act it was authorized to a 32-foot depth, in 1945 it was authorized to a depth of 34 feet.

Mr. HAND. Do you really require this depth for the waterway? This is approximately the same depth as we have in the New York Harbor.

General CHORPENING. We already have 34 feet in the channel coming up to this point, and the deepening of this Tule Lake extension to 34 feet ties into the 34 feet we have up to this point.

Mr. HAND. What is the general character of the shipping there? I do not mean to have you repeat the names of the firms you have already mentioned, but what is the general size of the vessels using this waterway?

Colonel DIXON. Tankers for oil, the same kind of tankers that we talked about with reference to the New York and New Jersey channel.

Mr. HAND. The big super oil carriers?

Colonel DIXON. Yes, sir.

Mr. HAND. Everything else is dependent on that. The other boats are of shallow draft, and small-sized vessels. You have got to build for the super tankers, I suppose.

Colonel DIXON. The large oil carriers, require up to 35 feet.

Mr. HAND. The answer to my question in that connection is that the use of this waterway requires reasonably a 34-foot depth?

Colonel DIXON. That is correct, sir.

Mr. HAND. So the increase in the depth apparently is justified by reason of the development of the character of shipping?

Colonel DIXON. That is correct, sir.

NORFOLK HARBOR, CRANEY ISLAND DISPOSAL AREA, VA.

Date	Unobligated balance	Unexpended balance
June 30, 1953	(1)	(1)
Dec. 31, 1953	$691,355	$692,230
June 30, 1954 (estimated)	0	234,700

[1] Planning funds only.

Statement of average annual benefits

Navigation: Savings in disposal of dredged material	$2,362,100
Average annual charges	1,519,440

Data on continuing contracts

	Estimated contract earnings
Continuing contracts in force	None
Proposed in fiscal year 1954 but not yet in force: Construction of disposal area	$5,039,700
Proposed in fiscal year 1955: Construction of rehandling plant	2,333,600

Mr. RABAUT. The final project for this morning, is the final navigation project, which is for the Norfolk Harbor, Craney Island disposal area, which has a total estimated cost of $16,328,600. There have been appropriations to date of $8,533,200, and we have before us a request for $3 million. I believe I am correct in stating that the initial appropriation for this particular phase of the Norfolk Harbor project, that is, the Craney Island disposal area, was made in the current fiscal year in the amount of $700,000.

Will you give us the status of the project as of this time?

Colonel DIXON. The specific funds under request today, are for the Craney Island disposal area. We have a difficult situation in the Norfolk Harbor of getting rid of spoil brought about by dredging channels for maintenance and other purposes. We have had difficulty in the past with trying to find areas to dump this material without injury to the oyster interests, and without interrupting the use of the channel. This requires hauling this material out to the open sea at considerable expense.

We came up with a plan of developing this leveed area, of some 2,500 acres, where we could place the material which would eventually result in the leveed area being filled.

This work is being initiated with funds appropriated for fiscal year 1954. The amount before you, the $3 million, is for continuation of that work. It will involve construction of a leveed area of around 2,500 acres, and certain plants to handle the dredged material and place them in this leveed area.

Mr. DAVIS. When you mention, on page 203 of the justification, the balance to complete after fiscal year 1955, of $4,795,400, does that refer to the overall Norfolk Harbor project, or does it refer to the specific item, the Craney Island disposal area?

Colonel DIXON. That refers to the overall project, sir.

Mr. DAVIS. You have had $700,000 in the current fiscal year, and you are requesting $3 million for the 1955 fiscal year. What, if any remaining amount will be required to complete this Craney Island disposal area?

Colonel DIXON. $4,730,000, sir.

Mr. DAVIS. So that the total estimate for the project of Craney Island disposal area becomes $8,400,000, or thereabouts?

Colonel DIXON. Yes, sir; that is correct.

Mr. DAVIS. What is the relationship of this disposal area and the dredging that is required to the proposed alteration of the belt-line railroad, or bridge of that facility?

Colonel DIXON. It is an independent item, sir.

General CHORPENING. The railroad bridge is tied in with the completion of the Southern Branch Channel, which is the only item that remains to be completed in this overall authorized project outside of the Craney Island disposal area.

Mr. DAVIS. We have had conflicting testimony with respect to that bridge before this committee, and we needed to be assured that this is not tied up with that railroad bridge problem at all.

General CHORPENING. We scheduled our completion of the disposal area for June 30, 1956, and as I pointed out, the belt-line railroad bridge is tied into a certain small amount of work remaining on the Southern Branch Channel. The channel work has no connection with the disposal area, and the amount required, to complete that work is a very nominal amount—$65,400.

REHANDLING PLANT

Mr. DAVIS. Tell us about this proposed rehandling plant. Tell us how far you have gone with the plans in connection with it.

Colonel DIXON. The plans have been substantially completed for the Craney Island disposal area. We hope to initiate a contract, a continuing contract, the 1st of April, for the retention levee itself. In other words, the major item of construction involved.

We have done some work with the 1954 money on access roads and real estate. We have done planning on the rehandling equipment during 1954, and the funds requested for 1955 will be applied to a continuing contract to be initiated this year for the actual construction and also to initiate a contract for the rehandling plant.

Mr. DAVIS. Will you tell us a little bit more about that. What is the nature of this rehandling plant?

Colonel DIXON. That will be a stationary dredge, in effect. In other words, the material is dredged from the channels then transported and dumped into a rehandling basin which is an area alongside the leveed disposal area, and then we will use that plant to pick it up, pump it over into this leveed area, because naturally the leveed area is not directly accessible to the deep dredging area.

Mr. DAVIS. What portion of the $3 million you are requesting will go for that rehandling plant?

Colonel DIXON. The cost is about $2,333,000; that is the total cost of the rehandling equipment, which will be a continuing contract. All of that will not be expended in fiscal year 1955. The remainder will come from 1956 money.

Mr. DAVIS. Do you have a breakdown of that?

Colonel DIXON. Of the benefit-cost ratio?

Mr. DAVIS. Yes.

General CHORPENING. No, sir. $500,000 in the fiscal year 1955 for this would provide for the permanent operating equipment.

Mr. DAVIS. When do you anticipate your plant will be in such shape that you will be able to let a contract for that rehandling?

Colonel DIXON. I believe we expect to let a contract about the 1st of January 1955, for the rehandling equipment. This is one of the projects that results in a saving accruing to the Federal Government, because without it we have to haul this material out to the open sea. The estimated annual savings of $2,362,000 as a consequence furnishes the basis for the benefit-cost ratio.

General CHORPENING. I think there is another point that is quite important here, that is, we have just run out of places to put this dredged material in this general area, and it means taking it out to sea. This is a naval installation and it is vital that channel depths be maintained, particularly in time of war, and if we had to go out to sea for disposal of dredged material it is possible that would be very difficult, particularly in time of war, so this project provides the area

for disposal. In addition, it has a B–C ratio of 1.5 to 1 and it is very beneficial in the defense effort.

Mr. CEDERBERG. It is vital to the Navy?

General CHORPENING. Yes; very much so.

Colonel DIXON. The Secretary of the Navy has taken a strong position in support of it.

Mr. DAVIS. This disposal area you mentioned, is that on privately owned land that you had to go out and purchase, or do you own it now?

Colonel DIXON. It has been given to the Government by the local interests.

General CHORPENING. By the State of Virginia.

Mr. HAND. Is the land there in fact owned by the Government?

Colonel DIXON. The State has in fact conveyed the land to us.

Mr. HAND. The State has conveyed all of its title to the Federal Government; is that about it?

Colonel DIXON. I will have to check that point.

General CHORPENING. My statement here shows that the 3,400 acres of land has been obtained from the State of Virginia. I will have to check to see the status of the title.

Mr. HAND. Will you supply that information for the record?

General CHORPENING. Yes, sir.

Mr. HAND. Presumably, as this disposal progresses over a period of years you will fill this submarginal land, this piece of leveed land up above the surrounding water, and it is conceivable that it might eventually have great value. Is that not eventually correct?

General CHORPENING. That is possible.

Mr. HAND. It would be surrounded by very deep water, by navigable water.

General CHORPENING. Yes; very close to it.

Mr. HAND. I heard you speak of 3,400 acres, and the justification indicates that 2,500 acres eventually is to be Government-owned land, which would be the only piece of acreage built up above the surrounding water, and it would be entirely surrounded by deep, navigable, first-class water.

General CHORPENING. We will supply for the record a statement showing the status of the title.

Mr. HAND. I can conceive that it might well have substantial value, and therefore, it becomes important that we know just exactly who owns it.

General CHORPENING. Yes.

Colonel DIXON. I may state that we now own it, but we will check on that.

Mr. HAND. Put a statement in the record showing exactly the situation.

Colonel DIXON. Yes.

(The matter referred to follows:)

TITLE TO SUBMERGED LANDS FOR CRANEY ISLAND DISPOSAL AREA

By deed dated June 19, 1948, without cost to the United States all right, title, and interest in the submerged land to be occupied by the disposal area subject to the rights of lessees of such oyster-planting grounds as may be included in the lands conveyed. An opinion of the attorney general of the State of Virginia dated August 28, 1953, clarifies the provision in the aforesaid deed pertaining to "jurisdictional limitations and reservations." The effect of this is to show that there are no reversionary title conditions attached to said deed.

Prior to initiation of work it is proposed for the Federal Government and the State to jointly negotiate with the lessees for voluntary termination of these leases. In event voluntary negotiations are not successful condemnation proceedings will be initiated with both State and Federal Governments participating.

Mr. HAND. Let me get the cost straight. You stated the overall cost of this disposal area project around Craney Island is how much?

General CHORPENING. $4,730,000 is the cost to complete after this appropriation.

Mr. HAND. That is the total?

Colonel DIXON. No, sir. The total cost of that will be in the order of $8.5 million.

Mr. HAND. Based on the general statement by the Secretary, the dredges, which you call the rehandling equipment, will eventually come to $2,466,500; the retaining levee, $5,396,700, and the rest of the items are comparatively minor.

Colonel DIXON. Yes, sir.

Mr. HAND. When do you expect to finish this project?

Colonel DIXON. We expect to finish it in June of 1956.

Mr. HAND. The completion cost of this improvement, and also the cost of rehandling, and the difference between that cost and the cost of carrying the material to sea justifies the cost-benefit ratio?

General CHORPENING. That is the basis of our determination of the benefit-cost ratio.

Mr. HAND. What is the estimated annual cost of maintaining this rehandling plant, for the rehandling of this material?

Colonel DIXON. I have the annual benefit, which totals $2,362,100.

Mr. HAND. What is the annual estimated cost of handling this material?

Colonel DIXON. The average annual charges include the cost of handling this material and the amortization of the capital investment. That is estimated to be $1,519,400. The economic benefit is based on the same principle and formula, you might say, as used in any other project, and we come out with a benefit-cost ratio of 1.5 to 1.

Mr. HAND. As I recall, the capital cost is based on a figure of something like 3 percent?

Colonel DIXON. It is 2½ percent, sir.

Mr. HAND. Two and a half percent.

General CHORPENING. With a 50-year life, I believe.

Colonel DIXON. A 25-year life on this particular project, sir. You see in 25 years, at the rate of disposal, it will be completely filled.

Mr. HAND. Discuss with us briefly, if you will, the rather extraordinary cost of the levee of $5 million. How far are you going to build it, and of what kind of materials, and what makes it cost so much?

Colonel DIXON. The levee will be in the order of 20 feet high, and you can see from the chart that the total perimeter of the leveed area is rather extensive. It is roughly a mile on a side, and that means roughly 4 miles of levee at a 20-foot height.

Mr. HAND. It will be a dirt levee?

Colonel DIXON. A dirt levee, which will have to be riprapped.

Mr. HAND. Why is 20 the required height in your judgment?

Colonel DIXON. Well that depends upon the area needed. We could have made a lower levee, but it would have accommodated a lesser volume of material, dredge material. The 20-foot height was

established as a good engineering design, and if it were too high it would be difficult to get the material over it.

Mr. HAND. In other words, you do not need levees that high merely to retain this spoilage, but you do need it that high to retain the estimated amount of material over a long period of time?

Colonel DIXON. To take care of the volume requirements; yes, sir.

Mr. HAND. The higher the levee the more material it will accommodate.

Colonel DIXON. The more volume; yes.

Mr. HAND. Is it not true, that after you fill this area to a certain height that possibly you will not need anything in the way of a retaining wall?

General CHORPENING. After it is once filled?

Mr. HAND. It might slough off on the edges, but it will still be sufficient to hold up?

General CHORPENING. After it is once filled, which would take some time, but during the process of pumping the materials in there the levee would be needed to hold it in place.

Mr. HAND. What is the nature of the land there now; mostly swampy?

General CHORPENING. Mostly swampy land; yes. I think there is another thing to be considered in connection with this, and that is with respect to the underlying soil; how high can you economically build a levee; and there you may run into a lot of difficulty.

Mr. HAND. If it were feasible, and I am not saying that it is, you are the engineers—but if it were feasible to build a 10-foot levee we could save over $2.5 million in one crack there, could we not, apparently?

General CHORPENING. If you could build it. But if you did not build the levee to the 20-foot height you would have only half the capacity for the material. And you would then have to go ahead and build levee on top of the fill you had originally provided, and we think it is more economical to build it at the 20-foot level.

Mr. HAND. So in the long run you are going to have this piece of land, 20 feet above the surface of the surrounding water?

General CHORPENING. Yes.

Colonel DIXON. Above the surrounding water—it will be about 8 feet above tide; it will be just about 8 feet.

Mr. HAND. Above high tide.

Colonel DIXON. Generally, sir.

Mr. HAND. Even when it is built to the 20-foot level it will only be 8 feet above high tide?

Colonel DIXON. That land is now submerged.

Mr. HAND. At high tide?

Colonel DIXON. Yes, sir.

Mr. HAND. At approximately that same number of feet, I suppose.

Colonel DIXON. Yes, sir.

Mr. RABAUT. Was the benefit of this disposal area taken into account in arriving at the cost-benefit ratio?

General CHORPENING. You mean from the building of it?

Mr. RABAUT. Yes.

General CHORPENING. No, sir.

Mr. RABAUT. What about making the area larger and not making it so high?

General CHORPENING. I am not too familiar with the exact terrain there, Mr. Chairman, but all of those considerations were taken into account at the time the design was established. If it were made larger, then the physical topography might not permit of it. I do not know. But even if it did, then there would be more cost from pumping by the dredging plant. That will have to be carried by pipeline.

Mr. RABAUT. The pumping will take the material, which will contain a great deal of water.

General CHORPENING. That is correct; and the water then drains off.

Mr. RABAUT. I was thinking of the eventual value of the land. There would be that much greater surplus land, which would be of more value. I am not familiar with the area, but it seems to me that the activities in this general area are such that a greater area of land would be of more value.

General CHORPENING. It has been stated that we figured on a period of 25 years; that this will be adequate for a period of 25 years. Then it is possible that we will have to go in for more land in that vicinity in order to provide more disposal area on which to put this material. We will have to put it somewhere. But it was worked out after a lot of study and determined that this was the economic size and height to utilize the equipment.

Mr. RILEY. This is really going to continue indefinitely, General, and you will have to continue to remove some of this disposal material to keep the harbor in good shape; will you not?

General CHORPENING. Oh, yes. This is a harbor where continuous maintenance will be required as long as there is a harbor in that vicinity.

Mr. HAND. You say this is to be a dirt levee?

General CHORPENING. Yes; we are going to riprap it, because of the kind of materials that will be disposed of there; otherwise it will spread out.

Mr. HAND. Would it be possible to use long piling?

General CHORPENING. That is more expensive.

Mr. RABAUT. How far do you pump this material?

Colonel DIXON. From the channel. I think you can see that on the map.

Mr. RABAUT. From the channel over to the disposal area.

Colonel DIXON. Yes. The map indicates the distance.

General CHORPENING. You will also note on this map the little piece of dredging that will be required when and if the bridge is straightened out.

FLOOD CONTROL PROJECTS

GENERAL STATEMENT

Mr. DAVIS. General, how many flood-control projects do you have listed for our consideration this year?

General CHORPENING. Forty-nine projects are in the budget for flood control.

Mr. DAVIS. How many of them represent new starts or resumptions of suspended projects?

General CHORPENING. Seven of them represent new starts, and three are resumptions.

Before we go into the first project, there are a couple of other comments which I would like to make on the overall program.

Mr. DAVIS. We would be glad to have you do that.

General CHORPENING. I think it is also of interest that of the 49 projects in the 1955 budget before you the funds requested here will complete or substantially complete 10 of them.

Mr. DAVIS. Do any of the 10 that will be completed coincide with the projects which are listed as new starts or resumptions?

General CHORPENING. The Little Missouri does; yes, sir.

Mr. DAVIS. There is only one which we might call for our purposes, a one-shot proposition among the 49, is that correct?

General CHORPENING. That is correct, sir.

LITTLE MISSOURI RIVER BELOW MURFREESBORO, ARK.

No construction funds available.

STATEMENT OF AVERAGE ANNUAL BENEFITS

The operation of the Little Missouri River project, in conjunction with Narrows Reservoir, will afford protection to 20,000 acres of land above the confluence of Ozan Creek and Little Missouri River, and partial protection to 76,000 acres of land on the lower Little Missouri River. The project will give areas along the Little Missouri River much needed flood relief and materially aid the economy of the area which is dependent on sound year-round agriculture. The average annual benefits are estimated at $85,000 exclusively for flood control.

Average annual charges: The average annual charges are estimated to be $39,000.

DATA ON CONTINUING CONTRACTS

Description of work

1. Continuing contracts in force: None.
2. Proposed in fiscal year 1954 but not yet in force: None.
3. Proposed in fiscal year 1955: None.

Mr. DAVIS. The first project that we have before us is the Little Missouri River below Murfreesboro, Ark.

The total estimated cost is $530,000 and the total appropriations to date have been $38,000, leaving the requested appropriation for 1955 before us for $492,000.

I would assume that the previous appropriations were for planning purposes; is that correct?

Colonel STARBIRD. That is correct, sir.

Mr. DAVIS. Will you tell us about the project, and particularly give us the basis on which the decision was reached to proceed at this time?

Colonel STARBIRD. It meets several of the criteria, sir, that were previously explained to the committee. I believe you are familiar with those criteria. It is a small project which can be completed in a limited period of time, and it has a relatively low cost.

It has a high benefit to cost ratio. The benefit to cost ratio is 2.18.

The plans have been finished to a point where the plans and specifications will be ready at the end of this fiscal year, so that the contract can be let.

Local interests are making a relatively high contribution. The contribution will be in the neighborhood of $40,000 in the form of land, rights-of-way and guaranties against damages. There are no relocations.

In addition, they will be called upon to handle maintenance and operation, which will run around $19,000 a year.

The project will provide much needed flood control; the project is along about a 100-mile reach of the river, and there are some 96,000 acres that are subject to intermittent flooding thereon.

Flooding during recent years has reached as many as six floods per year. For example, in 1949, there were 6; in 1950 there were 6, and 3 in 1951, and I could go on back beyond that, but this will indicate that there has been frequent and intermittent flooding.

In addition, this project is one that fits with a Federal multipurpose project, which is the Narrows Reservoir, only recently completed.

The Narrows Reservoir was designed to give a channel outflow under maximum operation of 6,000 cubic feet per second. Parts of the channel right now have a capacity of only 5,000 cubic feet per second. Therefore, the power production is restricted, and we have had numerous complaints by individuals who feel that the production of power should be further restricted.

Those, basically, are the reasons for the selection, sir.

Mr. DAVIS. You consider this cost estimate a firm one and you know of no particular problems connected with it, so that we can be assured that the funds requested here will complete the work during the 1955 fiscal year?

Colonel STARBIRD. Planning is well along, and the estimates should be reliable. The work is of a simple type. Therefore, the answer is "Yes" to your question on the cost; and I know of no particular problems which might confront us in construction.

Mr. DAVIS. This is really a separate project in and of itself, but it is closely related to other projects of the Corps of Engineers?

Colonel STARBIRD. That is correct; it is directly downstream from the Narrows Dam, and, actually, starts from a point about 10 miles downstream from the dam and extends to the place where the Little Missouri River runs into the Ouachita River about 110 miles below the Narrows Dam.

The document recommending Narrows Reservoir also recommended this channel improvement.

Mr. DAVIS. This favorable benefit-to-cost ratio of better than 2 to 1 is computed entirely on the basis of a separate project, and it is not dependent upon the other construction that has taken place, or which will take place?

Colonel STARBIRD. Entirely on the basis of a separate project and does not depend on any future construction, sir.

Mr. HAND. This is purely a local project by itself; is it not, Colonel. It is a local flood-control project?

Colonel STARBIRD. It is local, sir, in the sense that the damage occurs only along that river; it does not retain any of the flow; it speeds up the flow through channel clearing and cutoffs.

Mr. HAND. How many cities and towns are affected, if any, by this project?

Colonel STARBIRD. There are no major cities or towns affected.

Mr. HAND. It is a matter of some 12,000 acres of agricultural land being involved?

Colonel STARBIRD. About 96,000 acres, altogether.

Mr. CEDERBERG. Colonel, will you mention the losses that are sustained annually along here?

Colonel STARBIRD. I have a computation, sir. I could give you approximately the benefit that would be achieved in terms of certain floods.

For instance, in May of 1953, there was a flood which if this project had been in operation, would have prevented damages to the extent of $36,000; and there were damages beyond that that this project would have prevented.

For example, in April of 1953, it would have prevented $15,000 in damages; in April 1952 it would have prevented $10,000; in July 1952, $110,000.

Mr. CEDERBERG. What is the principal commodity that is raised there?

I assume this is farmland that we are talking about; is that right?

Colonel STARBIRD. This is basically farmland, and I believe there is quite a lot of untilled land or forestland in the area. I do not have a list of the commodities which are raised.

Mr. CEDERBERG. I suppose this is a project that could be found in most any area in the United States. I know I have them in my district, and I imagine every district in the country has a project that would be very similar to this where there are certain floodings that happen, or areas that are flooded out.

You can definitely assure us that this project stands on its own merits, without being tied in with the power project farther up the river?

Colonel STARBIRD. It stands on its own merits, so far as being justified, from the flood control alone; yes, sir.

Mr. RILEY. How much improved efficiency does it give the Narrows power project?

Colonel STARBIRD. I cannot give you the exact figures, sir; the channel downstream, as I mentioned, has a capacity limited to 5,000 cubic feet per second. This project will increase that capacity to 6,000 cubic feet per second, which is the designed maximum output from Narrows Dam.

The amount to which the production has been interfered with is a question of the reduced amount of generating capacity at this particular project.

The upper reaches where there is clearing and snagging will give you a reach that can take the maximum capacity of water, and the cutoff below will speed up the drainage of water from there on to the Ouachita River.

Mr. RILEY. I was wondering whether or not you had actually had to cut off some of their generating capacity in order to keep the greater volume of water going into the lower reach?

Colonel STARBIRD. I believe that it has, sir.

Mr. CEDERBERG. Does this dam operate and produce power at the present time?

Colonel STARBIRD. Yes, sir.

Mr. CEDERBERG. How long has it been producing?

Colonel STARBIRD. It started production in 1950.

Mr. CEDERBERG. What is the history in regard to flooding prior to 1951 in comparison to the situation since the dam went into production?

Colonel STARBIRD. I do not have such a record, sir; however, the dam is a multipurpose flood-control and power installation, and as a result, I am certain that there has been some reduction of flooding because of the dam.

Mr. CEDERBERG. In other words, we are not faced with a proposition where, when they want to keep this power at a certain peak,

they are letting the water down there faster than it would have normally gone down, and created a condition that did not exist before?

Colonel STARBIRD. Let me answer that question by saying, "Generally, no, sir." For a period of time, the answer is "No"; but for a particular incident it might be that you are letting more down into the channel.

Mr. HAND. On the record, if you will, Colonel, would you give us the proportion of agricultural acres to the 96,000 total acres?

Colonel STARBIRD. All right, sir; I will get that.

(The information is as follows:)

The operation of the Little Missouri River project, in conjunction with Narrows Reservoir, will afford protection to 20,000 acres of land above the confluence of Ozan Creek and Little Missouri River, of which 9,000 are agricultural lands. In addition, partial protection will be provided for 76,000 acres of land on the lower Little Missouri River, of which 23,000 are agricultural lands.

RED RIVER LEVEES AND BANK STABILIZATION BELOW DENISON DAM, ARK., TEX., AND LA.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$10	$155,601
Dec. 31, 1953	451,284	500,195
June 30, 1954 (estimate)	None	None

STATEMENT OF AVERAGE ANNUAL BENEFITS

Approximately 800,000 acres of fertile farm land and 3,000 acres of urban land including part of the city of Shreveport, La., will receive flood protection from this project. This will be accomplished by raising and strengthening levees on the main stem of the Red River from Index, Tex. to Boyce, La., approximately 153 miles on the left bank and 240 miles on the right bank including some 17.6 miles of bank protection. Federal and State highways throughout the flood area as well as railroad facilities will also receive urgently needed protection from this project. The average annual benefits are estimated at $676,200 exclusively for flood control.

Average annual charges: The annual charges are estimated to be $547,050.

DATA ON CONTINUING CONTRACTS

Description of work

Continuing contracts in force: None.
Proposed in fiscal year 1954 but not yet in force: None.
Proposed in fiscal year 1955: None.

Mr. DAVIS. The next project is the Red River levees and bank stabilization below Denison Dam, Ark., Tex., and La., where the total estimated cost is $9,530,000 and there have been appropriations to date of $4,704,500.

We have before us a request for $335,000.

There has been some increase in the anticipated total cost of this project. Can you explain that for us?

Colonel STARBIRD. Yes, sir; there was an increase from $9,279,000 during the last year. This increase is due to price-level increases.

Mr. DAVIS. There is no change in the overall scope of the project?

Colonel STARBIRD. There is no change in the features; no, sir.

BENEFIT-TO-COST RATIO

Mr. DAVIS. Last year you gave us a benefit-cost ratio of 1.6 to 1, and this year I notice you have reduced that to 1.24 to 1. What is the explanation for that?

Colonel STARBIRD. I cannot explain the decrease from 1.6; I believe the 1.6 may have been on the basis of that being the benefit-cost ratio for the comprehensive project. This is a comprehensive project of levee improvement, stabilization, and a number of reservoirs.

I will check that and insert the explanation in the record, if you desire.

Mr. DAVIS. If you will, please.

(The information requested is as follows:)

The benefit to cost ratio of 1.6 reported in connection with the fiscal year 1954 budget as well as the ratio of 1.24 as reported this year in connection with the fiscal year 1955 budget is based on the levee and bank stabilization project only. The difference in the benefit to cost ratios is occasioned by a change in the method of benefit evaluation for the life of the project to conform to procedures currently in use. The 1.6 ratio was based on prices prevailing at that time whereas the 1.24 ratio is based on projected price levels.

Mr. DAVIS. Last year we were told that while there was an overall project here, that it was subject to division into a number of small increments, each of which were somewhat, at least partially, independent of the other increments involved.

Is that true of this $335,000 request that we have before us?

Colonel STARBIRD. This $335,000 request, sir, will build one increment that is independent from others. It will complete a second increment at Brownlee, which is in actuality a continuation of work initiated in the current fiscal year.

The Brownlee location is in the upper end of the channel through Shreveport. You cannot move the levee in that vicinity, which is close to the river bank. Here erosion is occurring and there is danger of flanking action behind the area across from Shreveport. The second part of the work in this area we are recommending be done with the 1955 funds.

The section on the opposite side of the river at Cash Point is independent—an independent section, and it is designed to control the river, which tends to cross in such a way as to further erode the opposite bank.

Here again, the erosion at the Cash Point location is almost adjacent to the levee.

Mr. DAVIS. One of the two, then, is a complete increment of itself, and the other is a completion of an increment that is already underway at the present time?

Colonel STARBIRD. Either underway or to be placed underway in the very near future.

Mr. DAVIS. Are we safe in assuming that you are prepared in your planning to go ahead with this work as soon as funds are made available?

Colonel STARBIRD. Yes, sir. We normally plan these in the spring after high water. The planning and construction together require about 6 to 8 months.

Mr. RILEY. This section would be an entity in itself that can withstand the floods that might come down? It would not be lost in flood time?

Colonel STARBIRD. No, sir; it really effects its maximum benefits in flood time, in that that is the time when the greatest erosion takes place.

We would not expect it to be lost.

CHERRY VALLEY RESERVOIR, CALIF.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$19,821	$77,681
Dec. 31, 1953	13,383	56,889
June 30, 1954 (estimate)	None	None

STATEMENT OF AVERAGE ANNUAL BENEFITS

Located in the upper Tuolumne River watershed 25 miles east of the town of Sonora, Calif., this reservoir, operated in conjunction with privately owned Hetch Hetchy and Don Pedro Reservoirs, will provide flood-control benefits in a large measure to about 8,000 acres of agricultural lands and several small communities along the Tuolumne River; and with the authorized San Joaquin levee plan and storage on Stanislaus River will assist in providing benefits to an area of 140,000 acres of croplands and several communities in the San Joaquin River area. In addition, suburban and industrial areas south of the city of Stockton, Calif., will also be benefited. The average annual flood-control benefits from the ultimate Tuolumne River development with New Don Pedro Reservoir are estimated at $515,000.

Average annual charges: Based on the ultimate development the average annual charges are estimated to be $423,100.

Data on continuing contracts Description of work:	*Total estimated contract earning*
1. Continuing contracts in force: (*a*) Dam	$8,545,000
2. Proposed in fiscal year 1954 but not yet in force	None
3. Proposed in fiscal year 1955	None

Mr. HAND. The next project is the Cherry Valley Reservoir in California.

The total estimated cost, as shown by the justifications, is $9 million; the total appropriations to date, or through fiscal 1954, are $7,469,900, and the amount currently requested in fiscal 1955 is $1 million, leaving a balance necessary to complete, as shown here, of $530,100.

We can assume that this project is virtually completed. What is the general nature of this construction, Colonel Starbird?

Colonel STARBIRD. Sir, this construction is a Federal reimbursement, as authorized by Congress, to local interests who are providing a degree of flood control in reservoirs they have constructed, plus those they are about to construct, or have in construction.

We are authorized under the act concerned and under the document recommending it, which was approved by that act, to contribute to the extent justified for flood control.

Mr. HAND. Do I understand we are not building anything?

Colonel STARBIRD. We are not building Cherry Valley Reservoir, sir. Cherry Valley is being built by the city and county of San Francisco, and two irrigation districts. The reservoir, along with three others in the area, were all built by the same authorities, and are used for water supply, irrigation, and power. We are reimbursing those authorities for certain guaranteed flood-control storage.

Mr. HAND. You calculate, I suppose, a proportion of flood-control benefits in connection with their water supply and irrigation operation?

Colonel STARBIRD. That is correct.

Mr. HAND. What is the reason for the considerable cost increase as shown here, Colonel.

Colonel STARBIRD. Sir, I will have to give a fairly long explanation of that, and I believe it can be shortened if you could look at the map in the back of your justifications.

You will note on that map there are two reservoirs named and in existence, that I will talk about further. One is Hetch Hetchy, which is on the extreme right, and the present Don Pedro Reservoir in the lower center.

Those two reservoirs, plus one other, have already been constructed by local interests. Cherry Valley, as has been brought our earlier, is under construction by local interests.

In 1945 the district engineer, as a result of a study of the Tuolumne River and the lower San Joaquin, recommended construction of a dam to provide about 320,000 acre-feet of storage below the existant Don Pedro project.

That recommendation was changed by the Board of Engineers for Rivers and Harbors, however, because local authorities did plan to build a bigger Don Pedro ultimately, and the reservoir we would build would interfere with theirs. The Chief of Engineers, therefore, recommended that he be authorized to contribute to the cost of new Don Pedro, or other suitable reservoirs, to the extent justified for flood control.

In 1940, when the city and the county and other authorities decided to build Cherry Valley, they found they could offer us 425,000 acre-feet, and that it would be split between Cherry Valley, when complete, Hetch Hetchy, and the existing Don Pedro project.

We engaged in a very lengthy negotiation with them at that time, and we found that the advantages for flood control that would be realized by the storage they could provide would be less than 320,000 feet, at the new Don Pedro site, when completed. We calculated it would be two-thirds of the benefits to be realized at the ultimate Don Pedro site.

We also calculated the cost of building that reservoir in 1949, and found that cost to be something over $20 million.

Further, that if that reservoir was built, the Federal contribution that would be justified would be $12 million. So, we multiply the two-thirds by the $12 million, and get the contribution of $8 million.

However, since that time, and particularly as a result of the 1950 and 1952 floods, we have tried to find a better arrangement for the provision of storage, and the local authorities will now provide us with not 425,000 acre-feet, but 440,000 acre-feet and, furthermore, a greater proportion of that will be further downstream in the Don Pedro Reservoir. In other words, they will provide down there 200,000 of the 400,000 feet instead of 175,000 under the prior agreement.

All of that storage is required, and all of it will only give us three-fourths of the benefits that new Don Pedro, when constructed, will

give, but as the result of that new agreement, we consider our commitment to be three-fourths of the $12 million at the 1949 price, or $9 million.

Mr. DAVIS. Actually, then, the nature of the overall project was changed little, if any; is that right?

Colonel STARBIRD. The nature has changed not at all, sir. The amount of storage has been changed to be more beneficial for flood control. It still does not reach the total considered and approved by the Congress when the authorization was given.

Mr. HAND. Has the changed concept to some extent interfered at all with the actual progress of the work?

Colonel STARBIRD. It has not, sir. I should clarify that. There is no water as yet stored at Cherry Valley. The storage at present is at Hetch Hetchy, and down in the existing Don Pedro. There may be some in Lake Eleanor, but I am not sure. They have been providing the maximum storage feasible since 1945, and it did help us in the 1950 and 1952 floods.

Mr. RILEY. Is any of this water used for irrigation purposes?

Colonel STARBIRD. Yes, sir; these reservoirs are used for water supply and irrigation in addition to being used for flood control.

General CHORPENING. And also there is some hydroelectric power down the line.

Colonel STARBIRD. That is correct.

Mr. RILEY. Are they controlled by the State of California?

General CHORPENING. The city of San Francisco owns all this. I do not know whether there is any control by the State or not. There may be, but this is a city of San Francisco development.

Mr. RILEY. Evidently, they have authority from the State since this is some distance away from San Francisco?

(Discussion off the record.)

LOS ANGELES COUNTY DRAINAGE AREA, CALIFORNIA

Date	Unobligated balance	Unexpended balance
June 30, 1953	$3,333	$3,319,270
Dec. 31, 1953	2,979,891	3,214,403
June 30, 1954 (estimated)	None	343,970

STATEMENT OF AVERAGE ANNUAL BENEFITS

The project is being constructed under a general comprehensive plan for flood control and related purposes along the principal streams and tributaries in Los Angeles County, Calif. The improvement of main and tributary channels and the construction of debris basins and reservoirs will provide flood-protection benefits for an area of 265,000 acres of highly industrialized property in Los Angeles County. Additional benefits will result from the prevention of interruptions to traffic on transcontinental railroads, arterial highways, and industrial production. The total average annual benefits are based on prevention of flood damage in this area and are estimated at $40,900,000.

Average annual charges: The average annual charges are estimated at $14,262,000.

Data on continuing contracts

Description of work:	*Total estimated contract cost*
Continuing contracts in force:	
(*a*) Railroads, Stewart and Gray Rd. to Pacific Electric Ry., St. Anna Branch; channels, Stewart and Gray Rd. to Pacific Electric Ry., St. Anna branch	$660,000
(*b*) Channel, part 2, Arleta Ave. to Lopez Dam	1,376,900
(*c*) Railroads, Whittier Narrows to Los Angeles River, part 2	215,300
(*d*) Channels and utilities, Whittier Narrows to Los Angeles River, part 2 (lower)	2,391,200
Proposed in fiscal year 1954 but not yet in force:	
(*a*) Channel part 6, Sepulveda Reservoir to Reseda Blvd	1,733,000
(*b*) Railroad, utilities, and channel, part 2, 7th to 9th Sts	1,151,000
(*c*) Roads, Lopez Reservoir (Maclay St.)	110,000
(*d*) Dams, Lopez Reservoir, nonoverflow	329,400
(*e*) Dams, Lopez Reservoir, overflow	338,600
(*f*) Railroad, Whittier Narrows Reservoir to Los Angeles River, part 3, Pacific Electric Ry. bridge	270,200
(*g*) Channels, Whittier Narrows to Los Angeles River, part 3 (lower)	746,100
(*h*) Channels, part 3, 9th St. to 20th St	1,165,000
Proposed in fiscal year 1955:	
(*a*) Channels, part 4, 20th St. to Willow St	1,117,400
(*b*) Utilities, San Francisco Ry. to Whittier Narrows Reservoir, part 1 (upper)	24,800
(*c*) Railroad and channels, San Francisco Ry. to Whittier Narrows Reservoir, part 1 (upper)	2,745,300
(*d*) Channels, Whittier Narrows Reservoir to Los Angeles River, part 4 (lower)	3,209,300
(*e*) Channels, Arcadia Wash system, part 1	2,321,700
(*f*) Channels, Eaton Wash, part 1	2,093,700

Mr. DAVIS. The next project is the Los Angeles County drainage area, excluding the Whittier Narrows Reservoir, where we have a total estimated cost of $326.885,400. The total appropriations to date, including $6,200,000 for the current fiscal year, amount to $119,926,300.

We have before us a request for $8 million for 1955 fiscal year.

Is this increase in the total estimate of about $800,000 purely a cost index increase or does that represent something else?

Colonel STARBIRD. It is a costing matter, sir. It is a price level increase, compensated somewhat by lower bids on certain units.

Mr. DAVIS. Generally speaking, tell us where the lines are drawn between the responsibilities of the Los Angeles County drainage district, and the Federal Government, in the construction in this area?

Colonel STARBIRD. In general, we build the major channel—the major drainage channel and major flood-control channels—and we build the more important debris basins and reservoirs.

The county and city, of course, provide lands, relocations, provisions against damage, and maintenance and operation of a major part of the project. But, in addition, they put up the storm drains and the connecting drains that enable the safe passage of the water to our major channels or to the major reservoirs.

Mr. DAVIS. For instance, we had this serious fire out there recently which has denuded portions of that very sharp incline of the mountains there. The first impact of that situation, I suppose, will be felt in the debris basins; is that correct?

Colonel STARBIRD. That is correct.

General CHORPENING. I think at this point I should introduce into the record a statement that has an effect on this project; on Whittier

Narrows Reservoir; and on the Folsom Reservoir. Since the time we prepared our estimates and justification sheets for the Bureau of the Budget last summer, we have had certain things happen in the way of opening of bids and negotiations which indicate that our estimated costs and estimated need for funds on Whittier Narrows this year will be $1.5 million less than is presently before you in the budget.

We propose to apply that $1.5 million in this fashion: One-half million additional to the Los Angeles project now under consideration, and the other $1 million on the Folsom Reservoir.

Only today did we secure approval of the Bureau of the Budget and I will place that in the record in connection with the Folsom Project.

Mr. DAVIS. That will be done.

(The information may be found on p. 408.)

General CHORPENING. We do not have the detailed justifications sheets to reflect those changes, but we will have them at the end of this week or early next week.

However, that goes back to the question which you have raised on the Sawpit Wash, where this forest fire occurred.

Undoubtedly, our proposed use of this additional $500,000 for the Los Angeles project will be in connection with some work looking toward alleviating the increased flood hazard which has been created by the recent forest fire which did denude a considerable amount of timber there, and which has set up an erosion problem which is worrying the people of Los Angeles.

Colonel STARBIRD. If you look at your map with respect to this project, sir, I believe I can explain it:

As you can see, the black spot near the middle of the page is the Santa Fe Reservoir, and if you go down the Rio Hondo a short distance, you can see in very small print: "Sawpit Wash"; and that it has a little debris basin already constructed at the top of it.

There were burned over 13,200 acres, generally centered above Sawpit Wash, and above the reservoirs—two small reservoirs to the left of Sawpit Wash Reservoir. Part of that which was burned was downstream along Sawpit Wash.

We have, in the approved project, work contemplated for the improvement of Sawpit Wash up through that triangle shown on the map, and a somewhat larger debris basin than that already constructed by local interests.

The local interests have constructed the Sawpit Dam. The proposed work that should be undertaken is construction of that debris basin, and construction also as early as practicable of Sawpit Wash downstream. About 4,000 acres of the burned ground lies adjacent to Sawpit Wash, or above Sawpit Wash, draining into it.

The main danger comes from the fact that the bare ground in these extremely large areas is washed into the channel thus blocking this tortuous channel as it now exists thereby affecting the flow from relatively large areas.

If the debris basin were complete and the channel were improved, protection would be given to an area in which 10,000 people now live, and the property is valued at $25 million.

Incidentally, the city has made arrangements already for the warning of those individuals in case a large storm happens, because they feel they must evacuate them—at least, those in the critical locations.

They contemplate evacuating almost all of those in this area if a major storm threatens. I have talked to the Department of Agriculture, as has our field agency, and the Department is contemplating a replanting program from emergency funds but they do not have the estimates as yet, nor the surveys completed.

I have the forestry people's estimate that before reforestation can take place to a point where the soil will be controlled, a period of 7 to 15 years will be required.

That explains the general background, sir, and I might mention one thing more, that Little Sawpit Basin, which the local interests have put in and which actually appears to be quite large, would hold about 300,000 feet of material, and they estimate that that would be filled by one moderate, major storm, with the ground in its present condition.

Mr. DAVIS. Will you tell us how the conclusion was reached that it is a Federal responsibility to build another protective basin just below the Sawpit Dam which was built by local interests?

Colonel STARBIRD. As I mentioned earlier, we build the more important debris basins. However, the local interests have built basins there which are about the same size as ours. We were providing originally a basic major channel system, and where the debris basins were needed, or where we felt they were needed, and where they were of relatively large size, we recommended them and it was approved in the document which I mentioned.

As you know, I believe, sir, the local contribution is extremely heavy on this project. The lands and relocations are estimated at $49 million total, and the local interests have constructed temporary basins, drainage facilities, to the expense of around $80 million more, and they contemplate spending around $70 million more on other drainage systems.

CONGRESSIONAL AUTHORIZATION

Mr. DAVIS. When was the last time that the Public Works Committee of the House took a good look at this project?

General CHORPENING. The last authorization was a modification of the original authorization of 1936, and that was in May of 1950.

Mr. DAVIS. Was that purely an enlargement of the authorization for Federal participation here, or did that review some of the authorization?

Colonel STARBIRD. That was an addition to the authorization, sir.

Mr. DAVIS. Which does not give us too much assurance that they actually took a good look at the overall project; does it?

Colonel STARBIRD. It does not give assurance at that time, sir, but they were furnished the overall estimate of cost. Apparently in 1941 they looked at the overall project because we extended it at that time to include additional reservoir control basins, flood channels and debris basins for flood control and related purposes.

Mr. DAVIS. Then this extra $500,000 which you have just referred to there bears direct relation to this denuding of part of the mountainous area by these recent forest fires; does it not?

General CHORPENING. That is correct; yes, sir.

Mr. DAVIS. Does that represent the total reaction of the corps, at least, from a construction standpoint, to what has been referred to as a major situation that has arisen as a result of that fire?

Colonel STARBIRD. No, sir; that is not the situation. The $500,000 will initiate the project. The total cost of it is in the neighborhood of $3 million. It is a part of the authorized project. The only thing that is being done is to change the priority somewhat.

Mr. DAVIS. I understand that bills have been introduced by some members of the California delegation as a result of the hazards created by this fire, but this portion can be handled completely within the already-authorized projects, and does represent the initiation of the steps which need to be taken as a result of that condition there; is that correct?

General CHORPENING. That is correct, sir. This, as I explained, does not represent any increase in the total budgetary request. It is due to the lower amount required for Whittier Narrows, part of which we are applying here. Anything further that might be developed as essential would have to be taken care of here in connection with the bill, or a supplemental appropriation, which we at this time are not considering.

This has only recently occurred, and at this time our people in the field are still in consultation with the local interests in this connection and part of that will be reflected in the justification sheets which we stated we will have here shortly.

Mr. DAVIS. Will you give us a breakdown of the work which you plan to do with the remaining $8 million of the request in the Los Angeles area?

Colonel STARBIRD. Again, I think it would be easier to follow in the map.

I will start on the left-hand side of the map, and generally work toward the east. You can see just above that Sepulveda Reservoir a green mark and a red mark. We will initiate a section of improvement above Sepulveda with 1954 money, which is the green mark.

We would continue that, and initiate one more at the estimated cost of around $1,600,000. That is an area of highly developed small housing and suburban-type businesses.

The valley there is about 2 miles wide, and is dead flat. The channel has little capacity, and even a moderate storm would overflow it, and it would cause damage in an extensive area.

To the north of Sepulveda Reservoir, you can see that we are improving Pacoima Wash, with 1954 money, and also initiating Lopez Reservoir. That is one of the major debris basins to control the outflow of debris, and prevent its blocking the improved channel. It is desirable and necessary to complete that reservoir as early as practicable.

It is economical to complete it in fiscal year 1955. The amount required to complete would be $668,000.

Moving to the main stem of the Los Angeles River below Los Angeles, we have initiated work on the channel to Long Beach, attempting to close the critical, unimproved 15-mile section from the seacoast up to the end of the improved channel. That, also, should be pushed as rapidly as practical. For that section we are recommending the continuation of section 2 and section 3, and the initiation of only 1 additional section at a cost of $2,602,000.

On the Rio Hondo, the major tributary coming in past and through Whittier, and joining the Los Angeles, you can see that we have constructed nearly about one quarter, and have the second quarter

under way. We are recommending the initiation of the third quarter and continuation of the second quarter.

The reason is that we consider it necessary to complete this work based on closure of Whittier Narrows in 1956 when that reservoir will become effective. The amount involved there is $1,558,000.

Above Whittier Narrows, you can see two small, red spots. Those spots are on Arcadia Wash and Eaton Wash, which are running north through heavily developed areas. There, it is desired to improve at least the lower reaches of that channel so as to carry all water that now impounds somewhat or to prevent debris clogging, and rushing that water into Whittier as soon as Whittier is able to take it.

In addition we will continue certain planning.

Mr. DAVIS. What was the amount of money involved there?

Colonel STARBIRD. $823,500 on Arcadia and Eaton, Wash., and on Sawpit, Wash., it will be $500,000. We will continue planning on certain other sections where construction is not to be started in fiscal year 1955; that is roughly $400,000.

Mr. DAVIS. Do you have a list with you showing the locations at which that planning money is to be spent?

Colonel STARBIRD. Yes. It is to be spent on Ballona Creek Basin, on the Centinela Creek Channel; the Burbank-Western channel; and certain tributaries of the San Gabriel River.

Mr. DAVIS. These 1955 projects do represent increments on pretty heavily projected future expenditures in either case do they not?

Colonel Starbird. They represent a continuing program. We believe that the hazards in the area are such as to warrant a much larger appropriation than that at such time as the situation will permit.

The work on this project since 1936, or rather, the appropriations to date, have totaled only 37 percent of the total project cost. We have been most fortunate in the more recent years since the start of this development in that there has been a dearth of large storms. However, even with the relative minor storms in 1952 our losses were in the neighborhood—that is, the damages were in the neighborhood of $5 million and several lives were lost. We do not know, of course, how long the favorable weather conditions from floods will continue.

General CHORPENING. I think this is without a doubt definitely one of the areas of the Nation where a real tragedy or catastrophe could occur.

Colonel STARBIRD. I might mention one other point. We have been pushing this project as hard as funds available would permit. You may have noted a carryover last year of an unexpended balance of $3,330,000. We expect a carryover this year of something in the neighborhood of $300,000.

LOPEZ BASIN

Mr. DAVIS. Referring back again to the Lopez Basin which it is proposed to complete within the fiscal year 1955, the Federal Government is bearing the entire cost of that project, including real estate and all of the appurtenances thereto; is that not true?

Colonel STARBIRD. That is correct.

Mr. DAVIS. Essentially it is a local flood-control project, is it not?

Colonel STARBIRD. It is essentially a flood-control project in that it takes the peak of the flow. The storms in that area are generally of short duration but of high intensity. However, in addition to that,

at the height of the floodwater it catches the debris which otherwise would be washed down into the channel, clog up the channel, and might even hit the center of the channel and hence cause an overflow.

Mr. DAVIS. How does this situation square with the statement that General Sturgis made earlier in the hearings to the effect that effort was being made to obtain the maximum local participation in local flood-protection projects?

General CHORPENING. He was talking about future projects based on present recommendations that we have made to the Bureau of the Budget on a policy that might be recommended to the Congress and might be considered in any proposed change in the policy for flood-control legislation. This project has been authorized and it is being prosecuted under existing policy now in effect and previously approved by the Congress. The division as between the Federal and local expenditures, of course, as in all of the projects, goes back to the recommendations made in the survey report which was presented to the Congress and authorized.

Mr. DAVIS. Would we ordinarily expect the local interests to furnish the land for the projects like this?

General CHORPENING. Every project that we study has to be considered on the particular merits of the case, and in this instance it apparently was concluded and recommended that this being in effect a flood-control reservoir that the land should be procured by the Federal Government. I know that, as compared with most local flood-control projects, the local contribution here is much more substantial than the average, both percentagewise and dollarwise.

Mr. DAVIS. You speaking of the overall?

General CHORPENING. Of the overall; yes, sir. I do not know that it has been brought out in the testimony to date, but the benefit-cost ratio on this project is 2.87 to 1, which is very high.

Mr. DAVIS. That includes the overall?

General CHORPENING. That is the overall.

Mr. DAVIS. Not just for Lopez.

General CHORPENING. Not just the Lopez Reservoir; no, sir.

CENTINELA CREEK

Mr. DAVIS. One of the projects that we had a chance to look at firsthand in September was Centinela Creek and I believe Colonel Frye at that time showed us some of the alternative proposals that he had in mind at that site. Can you tell us whether the plans have progressed to the point where you have a definite proposal in mind for construction?

Colonel STARBIRD. It has not crystallized yet; and as a result we are asking for planning money, not construction money. The local interests, incidentally, are now making surveys of the various routes.

Mr. DAVIS. I understand that such local opposition as there is objected to any one of the routes that they have surveyed. Is that about the size of it?

Colonel STARBIRD. No; I do not think it is. I think there is opposition to almost every route—scattered opposition, and we want to make sure that we get the best route that would provide the most economical solution to the problem.

Mr. DAVIS. Recognizing, or at least observing that there appears to be unusually good cooperation between representatives of the drainage area and the corps, does it not appear to you that under the formula worked out that the division of the costs should be very carefully reconsidered before we get too much further into this very expensive and overall project?

General CHORPENING. I think that it could not be applied just to this project. The question is whether or not the Congress would want to consider the overall flood-control laws as they now stand. We have endeavored through the years to apply, in our surveys and our recommendations to the Congress, the intent of the laws of 1936 and 1938 Flood Control Acts, and we have assumed, since we interpret those intentions in our surveys, that the authorization of the project indicated that Congress was satisfied with our interpretation of its intention. Now, in order to change the ground rules under which we considered these conditions, I believe there has to be some modification basically.

Mr. DAVIS. It puts this committee in a very difficult position, because I am satisfied that to some extent other members of the committee are not too happy about the overall arrangement; but at the same time we do recognize the urgency of the work in this area. Every time we do approve some of the request for appropriations because of the recognition of the need, I do not think it ought to be interpreted as representing our approval of the arrangement that does exist. On the other hand it would be very drastic and probably a very dangerous thing for us simply to say there is not going to be any money until we are presented with an overall program that is more to our satisfaction.

As far as you know there is no active program or discussion underway that attempts to get a more clear-cut division of the responsibility on this overall project?

General CHORPENING. Not on this specific project, no. May I point out that the Corps of Engineers feels that it must be and is responsible to the overall Federal policy under the laws as they now exist, and that the Federal costs are in proper response to the laws as they now stand on this specific project. And I will reiterate that we have recently made our recommendations through the proper channels for modifications in connection with the overall flood control policy, which will be considered, I assume by the Bureau of the Budget, in anything which they might wish to present to the Congress for action on the matter. But the Corps of Engineers does not feel, that in the face of the law as it now stands, with respect to an individual project, such as this, it can say that there ought to be a change here and more of the project should be provided by the local interest, without further action by the Congress, that is, further legislative action.

Mr. CEDERBERG. My only comment would be that having visited the area I can certainly appreciate the hazard that this area is subject to because of the rapid runoff from the higher areas which surround Los Angeles County. I was somewhat concerned about the fact that this project, having been started in 1936 which indicated that this danger was very present at that time and yet in view of that fact that

there has been such tremendous development of the area right up to this dangerous and hazardous area without adequate precaution and regulation by the local interests.

I understand they have floated a bond issue of around $180 million to take care of some of the runoff conditions and to build storm sewers and such things as that.

Colonel STARBIRD. That is what is reported to us.

Mr. CEDERBERG. One of the impressions I got was that you can go into some of these areas and find that no storm sewers exist there at all, so that the drainage that results from the storm and floods that come in that area bring dirt, gravel, and stones in from other large areas. I think that the Federal Government certainly is justified in making certain that the local interests are doing something to protect it as this development expands into the area and that some definite requirement be set up for them to take care of that need. I am not in position to say that the local interests have not moved forward as rapidly as they can. From what I have seen they certainly indicated a desire to do what they could. The cooperation is good, but I do think that is something that should be watched.

General CHORPENING. Very definitely we feel that in this project that the local interests are quite alert to their cooperation and are working very closely with the Army on what we plan to do. And the very fact that they have voted these bonds and provided so much money is as good an indication as I think could be had of that.

Mr. Chairman, I would like to add to what I said before, that I do not want any of my remarks to be construed that the Corps of Engineers would not be responsive to the indicated desires of this committee. We also feel that the action that we have taken in spending a great amount of time in developing the recommendations on the matter of local cooperation is a proper response to that indication.

Mr. RILEY. General, pursuing the thought in the inquiry expressed by our colleague from Michigan, Mr. Cederberg, is there any claim or requirement in this area for the use of lands that are being added to the city of Los Angeles itself? Is there any requirement placed on the suburban development, for instance, to take care of this excessive water that comes down out of the mountains in these flash floods?

General CHORPENING. I know of none.

Mr. RILEY. No requirement of the suburban development along that line.

General CHORPENING. I do not know of this sort of requirement. I do know that the local interests have gone ahead and procured rights-of-way for some of the portions of the project not yet under construction, or proposed to be constructed later. They have been forward looking in that regard.

Mr. RILEY. Do you think they may have acquired rights-of-way that are going to be necessary in the future development so that the area will not be built up to the natural channel like we saw in several instances?

General CHORPENING. I do not think they have acquired all of them, but they have been forward looking in some of the area. I remember—I do not recall which one it was—while out there last fall that they indicated they had bought real estate on either side of the channel.

Mr. RILEY. I am not trying to tell California how to run its business, but it would seem to me that they ought to have some plan under which they can go out and preserve the necessary rights-of-way for these drainage canals that are going to be required, before people come in and build right up to them and thus constitute a danger to future rights to the use of the property.

Now coming back to the debris basins you have constructed: after one of these floods who removes the debris and gets it ready for the next flood; whose obligation is that?

Colonel STARBIRD. That is on the city and the county that have built it; it is their responsibility. And at least in one case I remember they have a gravel company which takes the debris out. In the case of any large reservoir that would be an operating responsibility and that would be by us.

Mr. RILEY. I particularly had in mind the loose rock that I saw coming down; and I remember too that some of that could cause obstruction of the channel; and it might even cause danger to the concrete dam that you have put in.

Colonel STARBIRD. Yes; it would be necessary so far as the gates are concerned in the operating structure; and if it receives the debris over a long period of time to then study the advisability of either removing the debris or of constructing another structure, and the economies involved would determine which was advisable.

Mr. RILEY. You spoke of a gravel company. The rocks that come down out of the mountain as a result of these floods may not be of a quality they could use. They could make use of the gravel, but do you know whether they could be used as crushed stone, where the rocks are large.

Colonel STARBIRD. I cannot answer that. I imagine it would not be particularly economical for crushed rock because it has a great deal of sand mixed in with the boulder type, which are a little difficult to crush.

Mr. RILEY. The gravel could be used, but the gravel company would not be so much interested in the large rocks.

Colonel STARBIRD. They would be interested in using the gravel rather than using the large rocks. I believe that is correct. The justification says that as far as the debris in the basin is concerned the local interests maintain and operate it along with the channel.

Mr. RILEY. It is their obligation.

Colonel STARBIRD. It is their obligation. We, of course, operate the large reservoirs.

Mr. RILEY. It is going to take how long, under the present schedule to complete this project?

Colonel STARBIRD. We have not projected it out to completion.

Mr. RILEY. What do you think would be a safe estimate?

Colonel STARBIRD. It all depends on the rate of the appropriation.

Mr. RILEY. Assuming that you get the appropriation what would be your estimate.

Colonel STARBIRD. If we get $20 million for example per year it would take us about 10 years to complete.

General CHORPENING. After this year.

Mr. RILEY. Would any of the work be destroyed in the maintenance, or is it feasible or practical to stretch it out over a longer period of time say 15 or 20 years and still get the desired results?

Colonel STARBIRD. When we do that, stretch it out over a period of years, you are not being guaranteed against hazard ——

Mr. RILEY. In other words, unless you continue to carry out the whole construction program in a reasonable period of time the danger is larger during that period.

Colonel STARBIRD. There is a decreased danger, of course as the project nears completion, but the hazard would be there necessarily until it is completed.

Mr. RILEY. What is the prospect for hazard this year from snow, or are you in position to say now?

Colonel STARBIRD. We do not know as yet.

General CHORPENING. The hazard out there does not come so much from snow. The hazard here is from the flash storms and the very heavy rains up in the mountain range in the area around Los Angeles.

Mr. RILEY. Are you able to predict in advance when the runoff comes?

General CHORPENING. The condition here is of a very dangerous nature. The floods are not like the floods which we will have on the lower Mississippi River which you can forecast weeks in advance. These are flash floods that hit this area and you cannot tell when they will occur.

Mr. RILEY. I understand that sometimes it is the flash flood of less than 5 or 6 hours that constitutes the hazard.

General CHORPENING. Yes; they may happen almost instantly.

Mr. RILEY. They result more from rains than from snow.

General CHORPENING. That is correct.

Mr. RILEY. When is the rainy season?

General CHORPENING. In the winter months.

Mr. RABAUT. These are more in the nature of flash floods.

General CHORPENING. That is right.

Mr. RABAUT. What about this $180 million Los Angeles drainage area bonded indebtedness? You said they have a $180 million bond issue.

Colonel STARBIRD. That is right. One hundred and seventy-nine million dollars is what they are raising; that is, they have issued bonds for that.

Mr. RABAUT. Is that money available as yet?

Colonel STARBIRD. I do not know whether they have it all available or not.

Mr. RABAUT. Is any of it available?

General CHORPENING. The situation is such that they have already expended something over $100 million.

Mr. RABAUT. And is this to be added to that?

General CHORPENING. It will be added to the cost of the city.

Mr. RABAUT. Over and above; they have put $100 million in it already.

General CHORPENING. Yes.

Mr. RABAUT. It is a big project and they have had a tremendous influx of people into this area.

General CHORPENING. Tremendous; yes, sir.

Mr. RABAUT. And there is a great danger there.

General CHORPENING. It is one of the fastest growing areas in the Nation.

Colonel STARBIRD. The 1938 flood, which was long before the development of the present day resulted in the loss of 49 lives.

Mr. RILEY. What year was that?

Colonel STARBIRD. 1938.

MERCED COUNTY STREAM GROUP, CALIFORNIA

Date	Unobligated balance	Unexpended balance
June 30, 1953	$457,511	$457,511
Dec. 31, 1953	740,114	743,556
June 30, 1954 (estimated)	135,500	471,500

STATEMENT OF AVERAGE ANNUAL BENEFITS

The Merced County stream group project is a unit in the comprehensive plan for flood control and other purposes in the Sacramento-San Joaquin Basin. It will provide protection from floods to about 136,000 acres of agricultural lands, most of which are cultivated; to the city of Merced; to the towns of Planada and Le Grand; and to other smaller communities. The project will also protect U. S. Highway No. 99 and the main lines of the Southern Pacific and Santa Fe Railroads through the Central Valley. It will result in improved use of about 3,300 acres of land. Average annual benefits from the project, exclusively flood control amount to $340,000.

Average annual charges: Average annual charges are estimated to be $150,000.

Data on continuing contracts

	Total estimated contract earnings
Description of work: Continuing contracts in force	None
Proposed in fiscal year 1954 but not yet in force: (a) Dam—nonoverflow section, overflow section, and outlet works	$677,900
Proposed in fiscal year 1955	None

Mr. RABAUT. The next project is that of the Merced County stream group, California, with a total estimated Federal cost of $2,874,000; the appropriations to date have been $2,554,000 and the amount set forth in the fiscal year 1955 request is $320,000 which will bring the project to 100 percent completion. Can you assure us that you are going to complete this project with the $320,000?

Colonel STARBIRD. Our best estimate is that we will so complete it. We are very well along with the project and we believe we will be able to complete it with these funds.

Mr. RABAUT. Tell us briefly what you are going to do with this $320,000?

Colonel STARBIRD. With this money, together with the carryover money we will complete Bear Reservoir, which is the last of the four reservoirs. The project was started in 1948 and that will complete it. We are also completing two diversion channels, as shown in the red on the map. Those diversion channels have for their objective giving the project as a whole greater flexibility. We are also putting in the necessary gaging stations—the gages that go with the project.

Mr. RABAUT. The justification states that this will improve the use of about 3,300 acres of land.

Colonel STARBIRD. Provide for improved use. Actually the acres benefited total in the neighborhood of 136,000; and there are 3 towns that are benefited—Merced, Planada, and Le Grand. Local interests are making a relatively high contribution to this project. In

addition they perform relocations, guarantee the United States against damages, maintain and operate the project, except for the reservoirs. They are to undertake and have started work on channel improvement downstream which will cost them around $270,000.

Mr. RABAUT. Are there any groups out there who are opposing this project?

Colonel STARBIRD. I know of none; no, sir.

Mr. DAVIS. You had some difficulty out there last year which explained the fact that this project was not presented to the committee last year. Will you summarize that situation and, if you can, tell us what has been done to clear that up?

Colonel STARBIRD. We have had difficulty in the Bear Creek Reservoir—we have had two difficulties; one that we could not do the diversion channel work until Bear Reservoir was under construction. We have also had some trouble in the Bear Creek Reservoir; the foundation was not as good as we had thought it was. We have cleared that up now and are ready to go ahead; and as a result you will note that we are carrying over large unexpended sums.

Mr. DAVIS. Aside from the physical difficulties of construction there were some problems that had to be ironed out with the local interests involved, were there not?

Colonel STARBIRD. I believe that is correct. And they have been ironed out, with reference to maintenance on the lower channel and certain other local work. I will supply for the record any further information available on this matter.

(The matter referred to follows:)

There was some reluctance on the part of the local people to provide necessary channel work in accordance with the terms of the authorization. This difficulty has been eliminated by passage of the following State law:

Senate bill No. 1659, approved by the Governor June 12, 1953, chapter 1118, Laws of California is as follows:

CHAPTER 1118

An act to amend section 12650 of the water code, relating to flood-control work in connection with the Merced County Stream Group

The people of the State of California do enact as follows:

SECTION 1. Section 12650 of the water code is amended to read:

12650. The plan of improvement for flood protection on various streams in the Merced County Stream Group in the San Joaquin Valley is adopted and authorized substantially in accordance with recommendations of the Chief of Engineers in House Document 473, 78th Congress, 2d session, at an estimated cost to the State of $61,300.

Notwithstanding any estimated cost to the State contained in this section, local cooperation which shall be furnished by the State in connection with the plan of improvement for flood protection on various streams in the Merced County Stream Group in the San Joaquin Valley, adopted and authorized under this section shall include, without limitation as to the generality thereof:

(a) Enlargement of the channel of Miles Creek to the extent indicated on enclosure 3 of House Document 473, 78th Congress, 2d session.

(b) Acquisition of lands, easements and rights-of-way necessary for construction of the following diversions to the capacities indicated:

(1) Owens Creek diversion, 400 cubic feet per second.

(2) Black Rascal diversion, 3,000 cubic feet per second.

(c) Providing the following channel capacities of the various creeks:

(1) Burns Creek: 2,000 cubic feet per second on Burns Creek from its confluence with Bear Creek upstream to the section line common to sections 3 and 10, T. 7 S., R. 15 E., Mount Diablo base and meridian.

(2) Bear Creek: 2,000 cubic feet per second from its confluence with Burns Creek upstream to the section line common to sections 11 and 12, T. 7 S., R. 15 E.,

Mount Diablo base meridian; 4,000 cubic feet per second from its confluence with Black Rascal Creek diversion upstream to its confluence with Burns Creek; 7,000 cubic feet per second from its confluence with the head of Black Rascal Slough to the Black Rascal Creek diversion; not less than 3,100 cubic feet per second from its confluence with the lower end of Black Rascal Slough to the confluence with the head of Black Rascal Slough, so that the combined capacity of Bear Creek and Black Rascal Slough is not less than 7,000 cubic feet per second; 7,000 cubic feet per second from the section line common to sections 2 and 3, T. 8 S., R. 12 E., Mount Diablo base meridian, upstream to the confluence of Bear Creek with the lower end of Black Rascal Slough.

(3) Black Rascal Slough: Not less than 3,900 cubic feet per second and so that the combined capacity of Black Rascal Slough and Bear Creek is not less than 7,000 cubic feet per second.

(4) Miles Creek: 1,000 cubic feet per second from the Merced-El Nido Highway upstream to the section line common to sections 25 and 26, T. 7 S., R. 15 E., Mount Diablo base meridian.

(5) Owens Creek: 400 cubic feet per second from Owens Creek diversion to the bridge crossing at the section line common to sections 29 and 30, T. 7 S., R. 16 E., Mount Diablo base meridian.

(6) Mariposa Creek: 1,000 cubic feet per second from Owens Creek diversion upstream to the bridge located in SW¼ of section 10, T. 8 S., R. 16 E., Mount Diablo base meridian; 1,250 cubic feet per second from El Nido Highway upstream to Owens Creek diversion.

SACRAMENTO RIVER, CALIF.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$2,067	$103,905
Dec. 31, 1953	3,214,896	3,252,528
June 30, 1954 (estimate)	None	897,000

STATEMENT OF AVERAGE ANNUAL BENEFITS AND CHARGES

This project is a coordinated system of leveed natural waterways on the lower reaches of the Sacramento River and tributaries and will provide flood protection benefits to about 800,000 acres of fertile agricultural land, the cities of Marysville, Sacramento, and numerous smaller communities, railways and highways. This project has been developed over a period of nearly half a century under varying economic conditions, making it impossible to determine accurately the annual benefits or charges.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Embankment levee and drainage facilities near Freeport	$878,000
Proposed in fiscal year 1954 but not yet in force:	
(*a*) Embankment levee and drainage facilities, Arcade to Linda Creeks	720,600
(*b*) Embankment levee and drainage facilities, vicinity of Gridley Bridge	625,500
(*c*) Embankment levee, Grand Island	657,500
(*d*) Embankment levee and drainage facilities, Georgiana to Freeport	699,600
(*e*) Embankment levee, final stage, emergency bank protection	459,400
(*f*) Embankment levee, first stage, normal bank protection	300,800
Proposed in fiscal year 1955	None

Mr. DAVIS. The final project for consideration this afternoon is the Sacramento River, Calif., for which there is a total estimated project cost of $68,484,400, with local contribution in the amount of $4,949,400 making the total estimated Federal cost of $63,535,000. There have been appropriations to date, including the $3,800,000 in the current

fiscal year, of $47,611,500 and we have now before us a request for $3,000,000.

What is the explanation for the increased overall cost estimate since last year?

Colonel STARBIRD. That increased estimate is attributable to several factors: $1,236,000 of it is due to price level advances; $75,000 is for a contract which ran higher than we expected; $100,000 is our estimated cost of 1 year of additional channel dredging—dredging the main channel until the project is completed; $5,000 is an item for gaging for an additional year; $573,000 is for additional surveys and is added to the engineering costs.

Two years ago the committee went into the status of the transfer of this project over to local interests for them to take over, operate, and maintain.

General Chorpening reported at that time that he had recently arranged for the signing of the preliminary agreement. As the result of that agreement we ran rather brief surveys over the part of the project that we are still maintaining. What was accomplished was that only 280 miles of levee had been passed on to the local interest in 1950. But now it has gotten up in the neighborhood of 680 miles, as a result of the final agreement with the local interest.

That work cost the Corps of Engineers in the neighborhood of $150,000. In addition to that, during the running of the surveys it was found that there had been quite similar development along the levees; with some erosion in various levees that were not recorded on existing surveys.

It is now apparent that we shall have to run some additional surveys for more detail for construction for the remaining elements. The estimated cost of that is roughly around $250,000.

Now in addition there were certain levees originally built by local interests where we have had no supervision. The majority of these levees are located well up toward the riverbank; and the remainder of the cost increase is accounted for in that manner.

Mr. DAVIS. Then you turn over to local interest the maintenance that has been delayed in some respects has it not?

Colonel STARBIRD. It was delayed up until 1951 in certain features, and was recognized by the committee and was discussed by the committee at that time.

This project was under various authorizations—there are several altogether. The amount of contribution by local interests has varied over the period of time, that is the amount required has varied. It was a question, until General Chorpening arranged this agreement with the local interest, as to what they would do. After long-detialed work the arrangement has now been made final.

I might mention here that we will never get out completely of maintenance along that river for the reason that it is a navigation channel of the river.

General CHORPENING. We are turning over the levees to them.

Colonel STARBIRD. Levees, floodways, pumping plant, all of those have been passed to the local interests as completed.

Mr. DAVIS. Was a substantial portion of those turned over to the local interests during the past year?

Colonel STARBIRD. I cannot give it for the past year; but for the past 2 years, as I mentioned, the length of levees that have been turned over increased from 280 miles to 680 miles.

Mr. DAVIS. What are the major portion of the overall project that you expect to accomplish with the $3 million requested?

Colonel STARBIRD. We carry on continuing work, largely on the levees and bank protection, at nine locations. We shall also do some additional dredging at the mouth of the Cache Slough; that is in the nature of maintenance dredging for both navigation and flood control. We will continue a small cleaning-out item on one of the bypass channels; and install a communication net and prepare plans for units to be undertaken in later years.

WEDNESDAY, JANUARY 20, 1954.

SAN ANTONIO RESERVOIR, CALIF.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$345,305	$1,190,707
Dec. 31, 1953	1,545,294	2,330,075
June 30, 1954 (estimated)	None	156,500

STATEMENT OF AVERAGE ANNUAL BENEFITS

The project is in Los Angeles and San Bernardino Counties, Calif., about 30 miles east of the city of Los Angeles. Because of the tendency for San Antonio Creek to alter its course on the debris cone below the mouth of San Antonio Canyon, an area of 57,000 acres of highly improved agricultural property and valuable residential, commercial, and industrial property in the cities of Pomona, Claremont, Chino, Ontario, and Upland is subject to flood damage. In addition to flood-control benefits provided for these areas, further benefits will be obtained by eliminating any disruption to traffic flows on important highways in these areas as well as to railroad traffic representing at least 80 percent of all E–W transcontinental traffic and well over half of all rail traffic including coastal and local. San Antonio Reservoir and San Antonio and Chino Creeks Channel are coordinate parts of the overall plan for flood control. Based on this overall plan, the average annual benefits have been evaluated at $919,000 due to flood control exclusively.

Average annual charges: For the overall plan the estimated average annual charges amount to $781,500.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force: (*a*) Utility relocation	$226,300
Proposed in fiscal year 1954 but not yet in force: (*a*) Utility relocations, clearing, dam (overflow, nonoverflow, and outlet works), operational buildings	4,873,500
Proposed in fiscal year 1955	None

Mr. DAVIS. The committee will resume its hearings this morning with San Antonio Reservoir, Calif.

This project has a total estimated cost of $8,351,000, which appears to be the same as the estimate presented to us for the current fiscal year. The total appropriation to date, including $1,700,000 for the current fiscal year, have been $4,495,000.

We have before us a request for $2,500,000, which is scheduled to bring the project to 84 percent of completion.

General Chorpening, will you tell us about the progress made at this project, and what you plan to do with the money requested?

Colonel STARBIRD. Mr. Chairman, we have acquired the land; we have completed the outlet works, except for the gates and controls. We have completed a major part of the negotiations for the relocations that are in the area of the dam site, and which were naturally necessary before we could go ahead with the construction of the dam. We intend to let the primary contract for finishing of the dam, with an award in February. The large-scale construction will start in the latter part of this fiscal year and fiscal year 1955 will be the peak year of construction; the project will be completed in 1956.

The funds requested, and supplemented with the estimated carryover on June 30 will be used as follows:

$94,000 will be used to complete the relocations.

$2,748,500 will be used to carry on the main construction work on the embankments and spillways.

$261,000 will be used to continue the work on the outlets.

$10,000 will be used on clearing.

$68,600 on miscellaneous operational and reservoir structures.

It is necessary to proceed with the construction work as scheduled so as to bring the reservoir into operation in fiscal year 1956.

Mr. DAVIS. You have gotten the land acquisition program and the relocation problems under control as of this time?

Colonel STARBIRD. We think we have that under control now; yes, sir.

Mr. DAVIS. Last year we had considerable discussion of this project and the members of the subcommittee were something less than impressed, because at that time you carried a benefit-to-cost ratio of 1.03 to 1. I note in the justification this year that you show a B–C ratio of 1.18 to 1. What has occasioned that?

Colonel STARBIRD. Two things have occasioned it: We have brought up to date the information that would indicate the benefits to be expected. Also, there is a slight change in the method of computation. I will not go into the technicalities of that method, but we changed our methods in 1951 and we believe that the results we got through those changes were unrealistic. We have made a further modification, not a reversion to the old method, but a further modification this last year in the method of computing.

Mr. DAVIS. It is your anticipation to complete the funding of this project in 1956 fiscal year?

Colonel STARBIRD. That is correct.

Mr. HAND. The statement contained in the justification is that the project is 25 percent complete, which I suppose refers to the overall project.

That does not just refer to this project which is being presented.

Colonel STARBIRD. That is 25 percent completion of this project; that is not of the comprehensive plan.

Mr. HAND. How do you reconcile that statement on the first page of the justification, that it will be 54 percent complete with the funds carried in this fiscal year, and the appropriation requested will bring it to 84 percent of completion.

Colonel STARBIRD. The funds available to us through this fiscal year, represents 54 percent of the total required.

Mr. HAND. To complete?

Colonel STARBIRD. On a funds basis, yes, sir.

Mr. HAND. Completion of the funding, but not completion of the construction?

Colonel STARBIRD. That is correct. These figures on top, as of January 1, indicate that the physical construction work is 25 percent complete.

Mr. HAND. As of the end of this fiscal year you will be 84 percent complete?

Colonel STARBIRD. We will be 84 percent complete, as far as the funding is concerned.

Incidentally I would like to clarify the reference to the 25 percent; the 25 percent of construction.

Mr. HAND. Yes.

Colonel STARBIRD. It indicates how far we have gotten with the completion of the project. This 84 percent is the percentage of funding, considering the requested funds for 1955. We have scheduled the program so that it will be complete at the end of 1956, so the actual percentage of construction will be slightly less than 84 percent at the the end of fiscal year 1955.

UNEXPENDED AND UNOBLIGATED BALANCES

Mr. HAND. Do you have any unexpended amount, or unobligated funds on this project?

Colonel STARBIRD. We estimate we will carry into 1955 a total of $656,500; $500,000 of that will be loaned to Folsom, where there is need for additional money temporarily this fiscal year. We have that amount, $656,500, now scheduled for carryover into fiscal year 1955.

Mr. HAND. Is that unobligated, Colonel?

Colonel STARBIRD. No; that is unexpended.

Mr. HAND. How much do you have unobligated as of now on this project?

Colonel STARBIRD. As of December 31, 1953, we had about $1,545,000 unobligated. At the end of the year we expect that to be zero, but of course, the $500,000 loan will be unobligated.

Mr. HAND. I do not quite understand what you mean by the $500,000 loan. You mean that is a transfer to some other project?

Colonel STARBIRD. It is a temporary transfer to another project, where the work has been progressing faster than expected.

General CHORPENING. We have had the authority for many years, Mr. Hand, to make temporary loans to other projects, where due to the construction progress, we may have had good weather, or for whatever reason, and we could efficiently use more funds on the other project. The loan is repaid out of the next year's appropriation.

Mr. HAND. When you say loan, you mean a transfer from one budget item to another?

General CHORPENING. That is correct.

Mr. HAND. Do you expect a return of that during the fiscal year 1955 to this project?

General CHORPENING. Yes.

Mr. HAND. And with the appropriation estimated for this year, you expect to bring the project to 84 percent completion during this fiscal year?

General CHORPENING. During fiscal year 1955; yes, sir.

BENEFIT TO COST RATIO

Mr. HAND. That is what I mean, of course. The chairman has referred to an increase in the benefit-to-cost ratio. Just a general look at the project indicates a very considerable benefit-to-cost ratio, especially for the preservation of uninterrupted rail transportation, and so forth. I am just wondering whether the cost-benefit ratio is high enough.

General CHORPENING. Some of the benefits that we discussed with reference to railroads; and the impact on the national economy of the stoppage of the major rail lines, is hard to evaluate in terms of dollars and cents, but it is a definite advantage and benefit which will be realized by the construction of this project.

Mr. HAND. That is unevaluable, but it is not calculated in the present benefit-cost ratio figure?

General CHORPENING. No.

Mr. CANNON. This dam is exclusively for flood control?

General CHORPENING. Yes.

Mr. CANNON. You have had no thought of including irrigation?

General CHORPENING. No, sir.

Mr. CANNON. The reservoir back of the dam does have sufficient capacity to take care of the annual rise in the river?

General CHORPENING. Yes. Most of the time, Mr. Cannon, this particular stream is dry, absolutely dry, and the needs for flood control are so paramount that it could not possibly be justified for storage or for irrigation purposes.

Mr. CANNON. You do not have water storage there at all?

General CHORPENING. A small operating pool will be maintained initially, primarily to minimize accumulation of debris near the regulating outlets.

Mr. CANNON. As time goes on, the storage capacity will naturally be decreased, as the dam is silted up. Do you provide any way whereby you can eliminate that silt?

General CHORPENING. The amount of silt that will come into the reservoir is considered in the economic life of the reservoir, and is provided for in the storage capacity of the reservoir.

Colonel STARBIRD. We have a total of 9,000-odd acre-feet storage in the reservoir, of which there is an allowance of 2,000 acre-feet made to catch the debris.

Mr. CANNON. What would be the estimated life of the dam before it is 100 percent silted up?

Colonel STARBIRD. I believe it is expected that the 2,000 acre-feet is the amount of debris and siltation that would occur in a period of 50 years.

Mr. CANNON. In 50 years this will be completely filled with silt?

General CHORPENING. No; the 2,000 acre-feet storage referred to is the amount of a total of 9,100 acre-feet that would be silted up.

Mr. CANNON. Has consideration been given to further increasing the height at the end of 50 years to provide for further storage?

General CHORPENING. What in all probability would be done, is that at the end of 50 years, a study would be made of the engineering cost at that time, to determine whether it would be more economical to raise the height of the dam or to remove the silt that has been trapped in the reservoir up to that time.

Mr. CANNON. You think the 50 years of service will fully amortize the expense involved?

General CHORPENING. All our estimates of benefits and costs Mr. Cannon, are based on a 50-year service. In other words on the cost side of the ledger we amortize the project at 2.5 percent in that period of time.

Mr. CANNON. It is 25 percent complete with this appropriation?

General CHORPENING. Twenty-five percent complete at this time.

Mr. CANNON. What percentage of completion will there be when the appropriation, if granted, is received?

General CHORPENING. It would be something slightly less than 84 percent.

Mr. RABAUT. I notice in the justifications a list of the industrial plants that are affected in this area, and which necessitate flood control. Also included are tool and die works and electric plants supplying highly essential military goods; a $60 million guided-missile plant, and the high-powered transmission lines from the Hoover Dam to Los Angeles and San Diego, which are subject to overflow from floods originating above San Antonio Dam, and in addition, a large Kaiser steel mill. It would seem that this site is pretty well selected. However, I am going to leave it to my colleague, who was out there this summer and looked this project over.

I am only sorry that I was unable to go because of conditions over which I had no control.

Mr. RILEY. As I recall, this is one of the better locations for trapping floodwaters and bringing about the regulation of the flow of water.

General CHORPENING. That is correct.

Mr. RILEY. This could be described almost as a dam just to catch the flash floods and to regulate the flow, and to keep them from doing damage to the various industries and the development below this dam?

General CHORPENING. Yes.

Mr. RILEY. If you get the appropriation which you estimate for 1956, that will complete the appropriations for this project?

General CHORPENING. Yes.

Mr. RILEY. So that this project is to be completed about the latter part of 1955?

General CHORPENING. Yes.

Colonel STARBIRD. December 1955 is the way we now have it scheduled.

WHITTIER NARROWS RESERVOIR, CALIF.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$383,830	$3,392,057
Dec. 31, 1953	4,488,270	6,202,965
June 30, 1954 (estimated)	None	320,400

STATEMENT OF AVERAGE ANNUAL BENEFITS

This project located 10 miles east of Los Angeles is a unit in the general plan for flood control in the Los Angeles County drainage area. As such, it will provide substantial flood protection benefits for 60,000 acres of highly developed industrial, residential, and agricultural property in the south part of Los Angeles County. The overflow area downstream from the reservoir which includes important industries, harbor facilities, and main transcontinental railroads and highways will also receive flood control benefits. The estimated average annual benefits are $2,193,000.

Average annual charges: Estimated average annual charges amount of $1,397,000.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Road and utility relocations; embankment, stage II; San Gabriel and San Jose approach channels	3, 993, 500
(*b*) Gates and appurtenances	1, 984, 000
Proposed in fiscal year 1954 but not yet in force: (*a*) Road and utility relocations, dam embankment; stage III, outlet structure, Rio Hondo approach channel	4, 511, 100
Proposed in fiscal year 1955	None

Mr. DAVIS. Next is the Whittier Narrows Reservoir, Calif., which has a total estimated cost of $36,380,100, which appears to be very similar to the estimate presented to us last year.

The total appropriation to date, including the $5,200,000 in the current fiscal year, have been $27,867,100. We have before us a request for $5 million to bring the project to 90 percent of completion.

How does this happen to be carried as a separate project? I suppose the same question might have been related to the San Antonio Dam. Why are they carried separately from the overall Los Angeles County drainage project?

General CHORPENING. They were authorized separately by the Congress from the local flood-protection project of Los Angeles.

Mr. DAVIS. As a matter of fact, however, they are closely related and coordinated with the overall drainage project?

General CHORPENING. Particularly the one now under consideration, Whittier Narrows. The San Antonio Dam, you will recall is to the south, so that the watershed does not drain into either the Los Angeles or the San Gabriel Rivers. It is in the Santa Ana River Basin.

Mr. DAVIS. This project, I believe, has an oil refinery and some oil wells right in the reservoir area?

Colonel STARBIRD. That is correct. It is not a major refinery; it is an experimental refinery.

To start with, this is one of the projects that General Chorpening mentioned where we have reduced the requested appropriation for 1955. The requested appropriation is now $3,500,000 instead of $5 million.

Mr. DAVIS. Very well.

Colonel STARBIRD. The estimated cost has been reduced to $34,888,100. This project is now getting fairly well along, of course.

Mr. DAVIS. Will you tell us a little bit more about the basis on which you were able to reduce the overall cost and your request for this year?

Colonel STARBIRD. We recently let a contract for the spillway and outlet gates, and on that we have actually effected a savings of some-

where between $700,000 and $800,000; on the contract itself, it is around $700,000. But, because of engineering costs, and the like, it will be probably around $800,000, representing a savings already in hand.

In addition to that, in connection with the land and damages program, which is fairly well along, we feel that there is a real expectancy that we can save another $700,000, which is not a savings yet in hand, but is anticipated on the basis of a reevaluation and the negotiations which are progressing.

Mr. DAVIS. How have you been getting along with the plans for the protection or the relocation of the refinery there?

Colonel STARBIRD. That has not been finalized as yet. It is still under negotiation and study. Actually we are still trying to determine what should be the assessed valuation and the potential means of protection. We are about ready to present the new proposition to the oil company.

Mr. DAVIS. With the further sums appropriated for the current fiscal year you are going to relocate the Lincoln Avenue. How is the work there getting along?

Colonel STARBIRD. Lincoln Avenue has to go north across the dam. It is a ramp, really, although sometimes called a bridge. That is to be incorporated in a part of the third phase of the embankment work. That phase is scheduled for award shortly.

Mr. DAVIS. Have you worked out the negotiations so that you think you can proceed now?

Colonel STARBIRD. It is my understanding that the negotiations are completed for that.

Mr. DAVIS. You feel confident you will be able to reduce the estimates here by about $1.5 million, in spite of the fact that your negotiations with respect to the refinery and the oil wells are really not completed, do you?

Colonel STARBIRD. We feel that that is the probable expectation.

General CHORPENING. I might add this, that the expectation was for a little greater reduction than this. However, on the policy that we have been following, and as I explained to the committee earlier, we do not get too optimistic and then have to come back for a further estimate, as has happened a few times. We are not now, at this time, taking the full reduction that might be possible, because it is just too early to do that. So that the answer to your question, Mr. Chairman, is that I feel that we are sound in making this reduction at this time.

Mr. DAVIS. Referring to the map which you have furnished the committee, and which appears at page 285 of the justifications, will you detail for us the proposed use of the $3.5 million that has been requested for the 1955 fiscal year?

Colonel STARBIRD. That, together with the carryover, and the loan to be repaid, will give us approximately $5.5 million for expenditure during fiscal year 1955.

$663,000 will be used to continue the program of lands and damages.

$764,000 will be used to continue relocations.

$36,000 will be used for clearing in the general pool area shown on the map. We will continue the non-overflow section. In other words, the section of the dam proper as shown in red, the additional work totaling $891,200.

We will continue the contract just let on gates and appurtenances with $696,400.

We shall continue work on the outlet gates and on the outlets proper. That is a total of $1,789,000.

We will initiate and complete the access roads, at a cost of $158,000.

We will initiate the channel shown in red, above the word "Rio Hondo" on the map, and the additional channel on the San Jose Creek, at a cost of $447,900; and then we will have some lesser structures at a cost of $79,800.

Mr. DAVIS. As far as you can anticipate there are no major important obstacles in the way of accomplishing that construction during the fiscal year for which the funds are requested.

Colonel STARBIRD. None.

Mr. RILEY. This is one of the better flood-control projects in the Los Angeles area?

Colonel STARBIRD. It is an excellent project, which has a benefit-cost ratio of 1.5 to 1.

ANACOSTIA RIVER, D. C. AND MD.

No construction funds available.

STATEMENT OF AVERAGE ANNUAL BENEFITS

The project will provide a high degree of flood control for seven fast growing communities in Maryland; will prevent interruption to traffic caused by the frequent flooding of major north-south and east-west highways; will, by restoration of navigation to Bladensburg, Md., promote waterborne commercial and recreational traffic with attendent benefits to the area. The project is also an important factor in promoting the development of park areas along the river channel as an extension of the Anacosita Park in the District of Columbia, to serve the recreational needs of a population in excess of 500,000. Completion of the project will provide protection from frequent floods to an important section of the Washington metropolitan area and will insure uninterrupted transportation to and from the Capital. The improved navigation channel and the reestablished terminal facilities at Bladensburg will be utilized by small craft for deliveries of produce and seafood from the lower Potomac and Chesapeake Bay areas and for recreation. The average annual benefits are estimated to be $979,700.

Average annual charges: Total annual charges are estimated at $533,700.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
1. Continuing contracts in force	None
2. Proposed in fiscal year 1954 but not yet in force	None
3. Proposed in fiscal year 1955; (*a*) Channel, levee embankment and seepage-control measures, secs. 1 and 2, Northeast Branch	$1,798,700

Mr. DAVIS. The next flood-control project is a new one, as far as construction funds to be supplied by this committee are concerned, the Anacostia River Basin, D. C. and Md. This has a total Federal estimated cost of $8,311,100. The total appropriations to date have been $278,000, which, I believe it is correct to say, have been applied for planning purposes. We have before us a request for $1 million to initiate construction. This project has had considerable history, which I think will be of interest to the committee to have you bring up to date, General.

Colonel STARBIRD. Mr. Chairman, this is basically a flood-control project, but it has also some navigation benefits, and some navigation improvement. It is required at an early date for two reasons: First,

there is a substantial area, subject to intermittent flooding partially industrial, but primarily residential, consisting of seven communities in the area of Bladensburg, Md., wherein there are approximately 35,000 residents.

Secondly, there are critical highways running north out of Washington and service over them is interrupted each year by high water, and at a critical, strategic time, such interruption might be very dangerous. Even in peacetime it causes a great deal of inconvenience. To give you an example of the types of interference that has existed: In 1951 the high water resulted in interruptions to the use of the highways for a total of 29 days.

In 1952, 26 days.

In 1953, 26 days.

The project has a high benefit-cost ratio, which is indicative of the damages that are being caused in the area. The project benefit-cost ratio is 1.84 to 1.

The State of Maryland and the communities concerned are to make major contributions toward this project. That contribution is estimated as being $5,081,600. They have passed the necessary legislative actions, and provided permanent organizations, for making the funds available immediately upon the appropriation of funds for construction by the Federal Government.

Incidentally the local interests will pay for lands, damages, relocations, that is, highway relocations, and the like, and will take over the maintenance and operations of the major part of the project. They also will, of course, provide for the maintenance of project depths in the recreational boat basin and the commercial harbor.

We have brought the plans to the point where the section of the project that we recommend first, on the Northeast Branch, will be ready by July 1 of this year.

When the Northeast Branch is completed, fully constructed, it will provide for a fully usable unit of the overall project.

Then we have carried the negotiations with the railroads, to a point where the railroad has assured us of its willingness to fully cooperate. The railroad relocation, connected with the first phase of the construction, involves first the construction of a turnout crossing with the final permanent relocation in place in 1956.

The railroad has gone so far as to present us with preliminary plans which generally appear to be acceptable.

We feel that the project is urgently needed at the present time.

Mr. DAVIS. Is that the main line of the Baltimore & Ohio Railroad you speak of?

Colonel STARBIRD. It is called the Alexandria branch of the Baltimore & Ohio and is the main freight connection between the Potomac freight yards in Alexandria and the Pennsylvania Railroad lines to the north.

Mr. DAVIS. Will the release of construction funds that you have referred to, make available the entire $4.4 million to be supplied by the State and the local interests?

Colonel STARBIRD. It will not make available the money to us. However, it will make available the appropriation for their work.

Mr. DAVIS. The work to be done in the Northeast Branch, which appears to be some distance removed from the Peace Cross area, is

this going to have any direct effect on the floods at the Peace Cross area on the work you plan to do in fiscal 1955?

Colonel STARBIRD. I believe the answer is not entirely—that it will not take care of the entire problem at Peace Cross itself.

General CHORPENING. This will be an improvement on the Northeast Branch, to insure that there is an adequate channel there with protective levees. We would not do the work right at Peace Cross initially but that would follow in a proper engineering schedule for the work.

Mr. DAVIS. You spoke of the waterborne traffic that is going to receive some benefit. What kind of waterborne traffic did you refer to?

Colonel STARBIRD. It is expected to develop traffic in fish and oysters being brought up to the basin in Bladensburg. Also, there are locally produced vegetable crops that will be brought up from the lower Potomac and the Chesapeake. In addition, there will be certain recreational benefits.

Mr. DAVIS. What part of the benefits that you attribute to this project are allocated to navigation?

Colonel STARBIRD. The benefits to navigation are relatively small, but the project would still have a high benefit-cost ratio even without consideration of the navigational benefit. The navigation benefit is $94,100 out of a total benefit of $979,700 expected annually.

Mr. DAVIS. The plans for this project have been changed from time to time; have they not?

Has there not been a different concept of this project at various times in the past several years?

General CHORPENING. I think that is true; that there have been quite a number of different concepts on how to handle this problem. However, those have been resolved, our definite design studies are now complete, and detailed planning of the initial features are 70 percent complete at this time.

Mr. DAVIS. There is complete agreement now among the Corps of Engineers and the State of Maryland and the local interests involved as to the nature and the scope of this project; is there not?

General CHORPENING. That is correct, sir.

Mr. DAVIS. This is a firm estimate as to the Federal cost for the completion of the entire project as set forth in the map on page 291 of the justifications?

General CHORPENING. That is correct, sir.

Mr. DAVIS. What type of a tentative construction schedule does the corps have with respect to the overall project?

Colonel STARBIRD. We believe it would be desirable to construct the full project in 3 years, and have so scheduled it, sir.

Mr. DAVIS. This project was authorized in the 1950 Flood Control Act, I note, from your justifications.

At the time it was presented to the Public Works Committee was the scope of the project comparable to that which is now contemplated?

Colonel STARBIRD. The scope was comparable, sir.

Mr. DAVIS. In your planning report, you speak of adjustment and mention extending levee protection on the Northeast Branch at Riverdale, Md. Was that presented to the Public Works Committee?

General CHORPENING. No, sir.

Mr. DAVIS. What is the basis on which that adjustment was made?

General CHORPENING. The present plan of improvement in general is functionally the same as that presented to the Congress at the time of authorization. The Chief of Engineers does have authority to make minor modifications under that authorization.

Mr. DAVIS. What is the effect of the cost of the modification, or adjustment, as you refer to it, in your planning report?

General CHORPENING. Do you have that available, Colonel Starbird?

Colonel STARBIRD. We do not have the adjustment on that particular item of work. Certain other adjustments were made at the same time. Those adjustments included a decrease of navigation project depth, elimination of one basin there, and extending the levee protection as well.

The net effect of the overall was to reduce the project cost by $25,600.

We can insert in the record, should you desire, details on that.

(The matter referred to follows:)

In view of increased development in the Riverdale area since the original authorization, it was determined during the development of detailed design that the extension of the levee protection on the Northeast Branch at Riverdale would be fully justified based on the benefits to be derived by elimination of flood damages in this area. The cost of the levee extension at Riverdale is estimated to be $328,400. Annual charges are estimated at $18,400 and annual benefits at $29,600 giving a benefit-to-cost ratio of 1.61 for this modification.

The above additional costs are more than offset by the design studies which made possible savings on adjusted navigation depth and by providing one boat basin to serve both commercial and recreation boating. The saving in Federal costs for these changes totals $354,000 so that the net change in the cost estimate since last presented to Congress as a result of project modifications is a reduction of $25,600.

INCREASE IN FEDERAL COST

Mr. DAVIS. When this project was presented to the Congress in 1950, the estimated Federal cost was $4,531,200.

We have an estimate now of almost twice that amount. How do you explain that?

General CHORPENING. A great amount of that would, of course, be the result of the rise in construction costs since that time.

Although authorized in 1950, the estimates made were several years earlier than that.

Colonel STARBIRD. They were based on 1946 prices.

General CHORPENING. So prices have, if not doubled, increased considerably since that time.

Mr. DAVIS. Do you consider this as being an unusual variation from the presentation that you made to the Public Works Committee?

General CHORPENING. No, sir; I may indicate, by adding to my earlier remarks, that the cost index average of 1946 was 346. At the present time it is 612, which is about an 80-percent increase. 80 percent of $4,531,000 would be approximately $3,400,000, which would actually be very near the present estimated cost.

Mr. HAND. General, how did you arrive at this revised estimate? Was it largely by applying the increase in cost estimates, or did you arrive at it by specific and detailed estimate of cost?

General CHORPENING. By the latter method, sir.

Mr. HAND. I would like you, if you would, to describe to me generally the character of the flooding of this general area.

Colonel STARBIRD. This stream comes down from the upper reaches from a relatively rugged area to a very flat area, where the channel flows through the Hyattsville-Bladensburg area, and on down into the presently approved navigation channel below. The lower portion of that is tidal, and the whole area has a very, very slight slope. As a result there is a backwater effect, which tends to make it rise and overflow the banks. Further, and unfortunately, because of the relatively flat slope, drainage thereafter is quite slow.

Mr. HAND. I am glad to have that explanation, but what I want is the extent and nature of the flooding, after the floods have been caused by the condition which you have described.

Colonel STARBIRD. Do you want the figures?

Mr. HAND. Tell me about the depths of water that have been experienced, and what area they cover and just what part of this territory they primarily affect.

Colonel STARBIRD. I cannot give you the depths of the water, sir. I have seen the depths of the water there, around 2 to 3 feet, in the Peace Cross area proper. The depths I can get, if you would like for the record.

(The matter referred to follows:)

	Depth of water at Peace Cross	Area flooded		Depth of water at Peace Cross	Area flooded
FLOODS	*Feet*	*Acres*	FREQUENT SMALL FLOODS—continued	*Feet*	*Acres*
Flood of 1933	8	629	Fiscal year 1951, 16 floods	1–3	[1] 235
Design flood	14	750	Fiscal year 1950, 2 floods	1–2	[1] 150
FREQUENT SMALL FLOODS			Fiscal year 1949, 13 floods	1–2	[1] 150
Fiscal year 1953, 18 floods	1–4	[1] 350			
Fiscal year 1952, 17 floods	1–3	[1] 235			

[1] Corresponds to the largest flood for the period shown.

NOTE.—The acreage shown is generally in the communities of Bladensburg, Colmar Manor, Cottage City, Edmonston, and Brentwood.

Mr. HAND. Where else besides Peace Cross are the effects of these intermittent floods apparent?

Colonel STARBIRD. It generally is along the banks of the river throughout most of the area shown on the map, sir.

Mr. HAND. What is it along the banks of the river which is flooded by these intermittent floods?

Colonel STARBIRD. Basically residential areas along the banks of the river that are so affected.

COST OF DAMAGE OF PEACE CROSS

Mr. HAND. Do you have any figures or estimates to indicate to what extent these residential areas and the houses themselves are actually flooded during the high-water periods?

Colonel STARBIRD. No, sir; I do not. I can give you the damages that have occurred as to amounts.

Mr. HAND. That will be fine.

Colonel STARBIRD. There were 11 floods in 1953, and the highest damage caused in any one flood was $183,400 during that year.

In 1952 there were 16 floods, and the damage caused by the greatest was $254,300.

In 1951 there were 15 floods, and the greatest damage caused was approximately $71,000.

In 1950 there were 10 floods, and the largest was $108,000.

In 1949 there were 7 floods, and the largest was in the neighborhood of $35,000.

In the major flood of 1933 damages were $473,000, but if that flood recurred now, the damage would be over $3.5 million.

Mr. HAND. Let us take 1953 as an example. That was a fairly bad year; was it not?

Colonel STARBIRD. It is about an average year, during the last five.

Mr. HAND. What was your statement as to the total damage caused to the area by the flooding of the Anacostia during that year?

Colonel STARBIRD. It was in the neighborhood of $550,000.

Mr. HAND. Give me some indication, will you, Colonel, as to how those damages were calculated? What are the component parts of the damage, and what was the basis of your figures which now makes you say that the damages were so many dollars?

Colonel STARBIRD. After each flood or high water we send a group into the field who actually calculate the height of the waters and how long it stayed on the ground, by measurement and discussion with the individuals contacted and the various governmental agencies contacted in the affected towns. We thus secure the best estimate we can of the damage which actually occurred. In a very widespread area, the estimate, naturally, has to involve quite a bit of sampling. Recent flood data in this particular area was easily obtained since we were at work at the time on survey work and planning work. We were most anxious to establish good reliable flood damage data and the data collected here should be much better than normal.

Mr. HAND. Is it not true that it is a little difficult to determine flood damage in residential areas as compared, for example, to an agricultural area?

What I mean is, as you know, and this is susceptible to measurement, that if 10,000 acres of corn land, for example, is flooded, you can fairly accurately calculate what the value of that corn crop was, and what the value of that land was, and you can come pretty close to that.

When you go out into a residential area, you necessarily have to ask householder Jones and householder Smith what it did to his house, and from my experience with human nature, and some experience in local floods, householder Jones will invariably overestimate by about four times what this flood did to him.

General CHORPENING. We are familiar with that tendency of human nature, sir.

Mr. HAND. Do you discount it accordingly?

General CHORPENING. We discount that to quite an extent in our calculations. I would not quite agree with you, sir, that it is so simple to calculate the damages on agricultural land.

Mr. HAND. I do not think it is simple, but I think it might be more susceptible to calculation.

General CHORPENING. We have this complication, and I have had some experience with this: A flood may occur and drown out the current crop. You might say "Well, that is a complete loss this year."

However, the farmer, if the flood goes down soon enough, will look around and see if there is not some other crop that he might still plant that year.

Mr. HAND. That approach is perfectly clear.

General CHORPENING. So, there again, it takes a certain amount of judgment to come to a conclusion as to what, in fact, are the damages being suffered.

Mr. HAND. The area that really is flooded by the flood waters would not be improved by the possible relocation of highways, now, or hereafter to be proposed?

Colonel STARBIRD. There would be only a small decrease in the benefits due to the relocation of the highways.

Mr. HAND. There has been more than an 80 percent increase in the cost of this project since your original estimates and since the approval by the Public Works Committee, notwithstanding the fact that your estimates were made in 1946, and this was approved by the Public Works Committee on the basis of a cost somewhat in excess of $4 million; is that correct?

General CHORPENING. On an estimated cost at that time, yes, sir.

Mr. HAND. Has the Public Works Committee ever looked at this project at any time since they approved it for $4 million plus, and since it is now $7 million plus?

General CHORPENING. No, sir.

Mr. HAND. Can you furnish for the use of the committee some statement as to the actual status of the Maryland law so that we can be satisfied that the local contributions of $4.25 million will, in fact, be available if and when the Congress approves the initial start on the construction of this project?

General CHORPENING. Yes, sir; we can furnish that for the record, sir.

(The matter referred to follows:)

The act approved April 11, 1953, by the Governor of Maryland directed that local interests make immediately available $4,250,000 for construction of the local cooperation features as soon as Federal construction funds to initiate the project become available. These funds are to be made available as follows:

Maryland State Road Commission	$1, 500, 000
Prince Georges County, Md	1, 500, 000
Washington Suburban Sanitary Commission	750, 000
Maryland National Capitol Park and Planning Commission	500, 000

Assurances have been received that the local interests are ready to start immediately on construction of bridges, interior drainage and relocations but are forced by the terms of the legislative act to await congressional action in making Federal funds similarly available for the project.

Mr. CEDERBERG. General, is there any objection to this project by anyone that you know of?

General CHORPENING. I know of no objection, sir. I have had many, many people, official and otherwise, talk to me about it in the last 3 years, and I do not recall one person, either in writing or orally, saying anything against it. There may be some, but they certainly have not made themselves known to us.

Mr. CEDERBERG. There have been no objections by any Members of either party of this Congress, so far as you know; is that right?

General CHORPENING. No, sir; there have not.

Mr. CEDERBERG. Again, we may assume that they are also in favor of it, not only from the standpoint of the flood-control aspect, but also from the standpoint of the navigation aspects of the project?

General CHORPENING. I am trying to recall—it seems like a couple of years ago during hearings before the Senate Appropriations Committee, when we were at that time discussing the project and when, possibly, we were requesting planning funds, there was a little discussion by one or two of the members of that committee about the navigation phase.

Mr. CEDERBERG. How deep is this river under normal conditions?

General CHORPENING. Probably 4 or 5 feet.

Mr. CEDERBERG. I note that, according to the information I have here, that the maximum record of flood on the Anacostia River main stem was 17,000 cubic feet per second, and you have a designed flood in there of 45,000 cubic feet per second; also in the Northeast Branch 10,000 cubic feet per second, which is the maximum flood of record, and a design flood of 30,000; on the Northwest Branch your maximum flood record is 8,000, and you have a design flood now of 20,000.

Would you advise us as to the reasons the design flood has been made so much greater than the maximum flood record?

General CHORPENING. The design flood is determined from hydrological studies and meteorlogical data on the maximum that we think from those studies could occur. That is related, of course, there, to what has happened and what knowledge we have of storms that occurred in other parts of this area, and if transposed, what that would produce in the way of water.

That is our standard method of determining a design flood for our projects.

Mr. CEDERBERG. Does that have any effect on the land that will be acquired, or does that have to do with the height of the levees involved?

General CHORPENING. That has to do with the height of the levees. I had better amend that: It might be, in order to get the channel capacity, necessary to acquire somewhat more land, but not significantly so.

Mr. CEDERBERG. The Federal Government is paying for all of the construction costs of the levees involved in this project?

General CHORPENING. For the construction; yes, sir. The land is provided by local interests.

Mr. CEDERBERG. The maintenance will then be turned back to the local interests at the completion?

General CHORPENING. That is correct, sir.

DREDGING THE ANACOSTIA RIVER

Mr. CEDERBERG. I note here also that in computing your benefit-to-cost ratio there is a matter here under benefits which states that a reduction in dredging charges of $33,300 will be affected.

General CHORPENING. Yes, sir; we dredge periodically the lower already approved navigation channel in the Anacostia River, and by building this project, the dredging necessary in the lower channel will be reduced in the magnitude of the annual reduction which has been taken credit for.

Mr. CEDERBERG. An annual reduction from what amount?

General CHORPENING. I will have to insert that, sir.

(The matter referred to follows:)

Silt, at present deposited in the channel of the Anacostia River in the District of Columbia, which is either removed under the existing Washington Harbor navigation project or will require removal in completing the project for the reclamation of Anacostia River and Flats, D. C. This project was authorized by Congress in 1911 with funds to be provided under District of Columbia appropriations), will be intercepted by the improved channel in Maryland in an estimated amount of 48,750 cubic yards annually. In addition, the proposed navigation improvement will require dredging of 107,200 cubic yards of material, saving the cost of this work to the downstream reclamation project. The savings on both of the above items is estimated at $33,300 annually.

Mr. CEDERBERG. I have information that has come to my attention from those who have been quite familiar with this project, who cannot recall that there has ever been any amount of dredging done at this particular area for many years. Will you provide for the record the date upon which the last dredging was done, and the amount, and so forth, that are involved?

General CHORPENING. I will be glad to provide that for the record.

(The matter referred to follows:)

Previous dredging of the Anacostia River

(*a*) Navigation project:

March 1950	$159,000
October 1937	165,026

(*b*) Reclamation, Anacostia River and Flats, D. C.: Dredging carried on during the period of 1912–39. Total material dredged, 11,337,970 cubic yards at a total cost of $1,421,429.80.

There has been no dredging on the reclamation project since 1939 due to the direction by Congress that funds for this work be provided under District of Columbia appropriations. As a result, previously dredged channels have already become partially silted and a total of 1,500,000 cubic yards of dredging is now required in completing this project. There has been no channel dredging work within the State of Maryland.

Mr. CEDERBERG. And also the purpose of the dredging.

Colonel STARBIRD. Yes, sir. The purpose was navigation on the lower channel, and it was flood control on the upper channel.

Mr. CEDERBERG. Then, would you insert the amount of navigation that is involved on the channel?

Colonel STARBIRD. You want the amount of navigation, and the amount of past expenditures?

Mr. CEDERBERG. That is right.

(The matter referred to follows:)

The navigation facilities are expected to be utilized by 150 small boats to be based at Bladensburg, about 100 visiting small boats, small fishing and produce vessels to deliver seafood at an estimated value of $160,000 annually. In addition, other small-boat and barge navigation would be attracted by the improved channel to Bladensburg.

(Data on expenditures appears above.)

Mr. RABAUT. I would like to know what approach the Engineers used this year to convince the Bureau of the Budget on this project, and to get a Bureau of the Budget estimate when we failed for I do not know how many years to get it at about $4 million plus base as against this $8 million.

They must be developing a new technique down there in the Department.

General CHORPENING. Mr. Rabaut, as you know, since the summer of 1950 when the Korean emergency developed, the policy has generally been against any new starts. Very few new starts have been recommended to the Congress for initiation. There were a few for very special reasons.

Now, this year we were advised by the Bureau of the Budget that consideration was being given to some new starts, and the criteria were given to us that would be utilized and taken into consideration in determining what projects might qualify under a limited new-start policy. On the basis of those criteria and on the basis of overceiling recommendations made by us, the projects that are before this subcommittee were selected and included in the President's budget.

This project fully met the criteria established.

Mr. RABAUT. I must say that in the past the committee has been unanimous in opposing this project. An amendment was offered on the floor of the House by the gentleman from Maryland, Mr. Sasscer, for $25,000 which would have had the effect of initiating appropriations for this project.

I made a speech against the proposal and was successful. At the time I remember saying, "How would we look doing this thing here for ourselves, for the convenience of a great many Members of Congress and others in this particular area, as compared to many places throughout the country that were equally deserving of consideration?"

I just wanted that for the record, because something of this kind coming up at this time, so suddenly, is a tremendous change from the policy that we had before.

General CHORPENING. As has been brought out when the Chief of Engineers was here last week, our program has been decreased in the number of projects, very definitely, over the past number of years.

Mr. RABAUT. Yes; I understand, because the committee sought to catch up with the work.

General CHORPENING. Yes, sir, and consideration was given to a matter of so-called broadening the base of our program.

So much of the funds have been, and still are, going to a few very large projects in parts of the West and Far West, and to a limited extent the policy is now to broaden the base of this program to bring in countrywide, where justified, smaller projects. I am sure you have noted, as we have gone through these projects, that there have been new starts, generally on smaller projects in various areas of the country, where they do have a high justification and benefit-cost ratio, and where they will benefit generally urban areas.

Mr. RABAUT. I have my sheet here in the justifications marked very prominently with the word "new."

LOCAL INTERESTS

Mr. RILEY. Colonel, I believe you testified that all the land required for this project would be furnished by the local interests?

Colonel STARBIRD. That is correct.

Mr. RILEY. Is the cost of that land included in the $4.25 million which the local interests are putting up, or is that in addition?

Colonel STARBIRD. Yes, sir; that is included. In round numbers, the lands will cost $667,000; the bridge relocations about $2.2 million;

drainage and pumping facilities which they will put in there will cost about $825,000; the highway and utility adjustments will cost about $195,000, and boat-basin facilities that they are called upon to put in, $1,174,000.

Mr. RILEY. All of this flooded area is in Maryland, is it not, or is some of it in the District of Columbia?

Colonel STARBIRD. It is all in Maryland, sir.

Mr. RILEY. In other words, the Federal Government is putting up two-thirds of the cost and doing most of the construction work, and the local interests are changing certain bridges and roads, and furnishing the land and things of that nature, but the actual construction work is being paid for almost entirely by the Federal Government; is that right?

Colonel STARBIRD. The Federal Government is putting in the flood-control and navigation facilities, and the highway relocation, and the other construction is being accomplished by local interests.

Mr. RILEY. In regard to these local projects, does the percentage of participation by the local interests vary with the locations, or is there some yardstick by which we work, as in matching funds for highway construction, which is on a 50–50 basis?

Colonel STARBIRD. It varies, sir; the law is not written to require a percentage; rather, it requires them to accomplish certain things: those things being the furnishing of lands and easements, the guaranteeing of the Federal Government against future damages; the effecting of the relocation of public facilities, and maintenance and operation thereafter.

Incidentally, the figure that we have given does not cover any maintenance and operation costs they will have.

Mr. RILEY. There is no yardstick such as you have in the appropriations for Federal highways, and which the Federal Government participates in each project to a certain extent. Each project stands on its own bottom and is justified more or less individually.

General CHORPENING. That is correct; and rather than a percentage, it is based on the requirements of law as stated here as to these things the local interests will provide.

Now, depending on the locality, in some places, the costs of providing those might be quite high comparatively. In others, it might be quite low comparatively. That is the problem that we have tackled in our studies, and it is treated in the report which was discussed and which General Sturgis mentioned that we have made to the Bureau of the Budget on this matter. We are attempting to get it on a more realistic basis. It ties back into discussions that we have held here in the committee.

Mr. RILEY. This is purely a State of Maryland proposition, and it happens to be adjacent to the District of Columbia. That is about the way you could describe it; is it not?

General CHORPENING. Yes, sir; as far as flood control is concerned.

PROTECTION AGAINST A MAXIMUM FLOOD

Mr. HAND. I am not clear, General, why in planning for a design flood, you have apparently trebled the design flood over the maximum past flood.

In your judgment, is it necessary to plan for a design flood of that magnitude in view of the past history?

General CHORPENING. Yes, sir; it is. The difference between a flood of record and a design flood may be great or small, depending again on what our studies on that matter actually show. After all, our precise data on what floods of record have been covers a relatively short period of time, and then we must go partially into theoretical calculations based on storms which we know have occurred, and which we know could have occurred in this vicinity, to arrive at the figure of what water might come down this particular stream. That is the same practice which we apply on all of our projects.

Mr. HAND. Since the history of all your studies over a period of years, we have never had a flood one third the size of the design that you are presently contemplating.

Would it not be feasible to design this protection for a somewhat lesser flood than three times the size of the height of the maximum flood of record?

General CHORPENING. You could design it that way, but this is what our technical people have derived as a possible flood condition: We can protect against that possible flood and still have a very fine benefit-cost ratio of 1.84 to 1. So, we are fully justified in giving that degree of protection.

Sometimes we find that to provide protection against the maximum flood, that we predict could happen, we cannot justify that degree of protection, but we might be able to justify the project for something less than the design flood.

Mr. HAND. I suppose that if you would consider it feasible to plan against a design flood of twice the size of the highest flood of record instead of three times the size, that that would have a very material effect on the cost of this project; would it not?

General CHORPENING. I don't think that it is by any means a straight-line proposition.

Mr. HAND. No; but it would have a very material effect on the cost.

General CHORPENING. But, to get that additional protection, percentagewise, it is not large, and it may be that in this instance you would find that you would have a lower benefit to cost ratio.

Mr. HAND. I am curious to know whether there might be any other alternate plans which are not so expensive. When I contemplate the fact that this, after all, is a 4-foot river and under normal circumstances, is not very extensive, that it is going to cost the Federal Government and the State of Maryland combined in excess of $12 million, which seems like a terrific cost for a 4-foot stream of this character, I wonder about alternate plans.

General CHORPENING. The trouble is that that 4-foot stream, when you do have a rainfall that is heavy, becomes a very considerable stream. It is like some of them out at Los Angeles which we have discussed. They are dry most of the year, but become raging torrents with rains.

STATE PARTICIPATION

Mr. RILEY. I believe you said that $195,000 for the improvement and relocation of highways is furnished by the State of Maryland?

Colonel STARBIRD. There was a much greater sum before the relocations. There was an estimate for bridges alone; I believe, I gave the figure, as approximately $3.2 million.

In addition to that, there are certain other highways and utility adjustments that do not involve bridge locations that will cost $195,000.

Mr. RILEY. Do you know whether or not the State of Maryland is eligible to use matching funds from the Federal Treasury for Federal highway construction?

General CHORPENING. I do not know, sir.

Mr. RILEY. I am just wondering whether or not that money is included in that $3 million plus, or whether there would be additional funds from the Federal Treasury. The State, to a very large extent, as I understand it, controls the allocation of those funds, but they have to have the approval of the Bureau of Roads.

Mr. CEDERBERG. I believe you are correct, Mr. Riley.

Mr. RILEY. I would be very much interested in knowing whether or not they expect to use funds in this relocation of the bridges and improvements of the roads derived from the Treasury because that would, of course, increase the Federal participation and lower the State participation on this project.

I wonder if that could be ascertained, and put into the record?

Colonel STARBIRD. We will do that, sir.

(The matter referred to follows:)

Information furnished by the Maryland State Road Commission is that funds for the bridges and approaches to be constructed by the Maryland State Road Commission will be from the general fund without Federal participation.

CENTRAL AND SOUTHERN FLORIDA

Date	Unobligated balance	Unexpended balance
June 30, 1953	$2,815,407	$6,368,759
Dec. 31, 1953	753,404	3,729,293
June 30, 1954 (estimate)	None	301,100

STATEMENT OF AVERAGE ANNUAL BENEFITS

The first phase of this project is a unit of a general comprehensive plan providing flood control benefits to an area embracing the Lake Okeechobee drainage basin, its regulatory outlets, a large portion of the Everglades and the lower east coast, all near the southern tip of the Florida peninsula and covering about 765 square miles of agricultural land. Current evaluated benefits based on the 1953 price levels are as follows:

	East coast Everglades area	Lake Okeechobee Everglades area	Totals
Prevention of flood damages	$6,097,300	$1,652,100	$7,749,400
Increased use of land	10,538,500	13,217,100	23,755,600
Propagation of fish and wildlife	262,900		262,900
Total	16,898,700	14,869,200	31,767,900

Average annual charges: The estimated average annual charges pertaining to the first phase are $4,847,700.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Canal, C–9 (sec. 2)	$588,300
(*b*) Pumping plants, S–9 (machinery)	527,800
(*c*) Pumping plants, S–9 (structure)	958,700
(*d*) Pumping plants, S–5A (structure)	1,206,200
(*e*) Levee embankment, L–7	2,268,800
(*f*) Levee embankment, L–15 1st stage (sec. 2)	687,600
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955:	
(*a*) Levee embankment, L–12, 1st stage	1,294,700
(*b*) Levee embankment, L–14, 1st stage	575,100
(*c*) Pumping plants, S–2 (machinery)	1,010,400
(*d*) Pumping plants, S–2 (structure)	1,462,600

Mr. DAVIS. The next project is the central and southern Florida project identified as the first phase, where the total estimated project cost is $111,688,900; the total estimated local contributions are $15,343,000; making a total estimated Federal cost of $96,345,900. There has been appropriated to date $18,774,000, and we have before us a request for $3,620,000 to bring this project to 23 percent of its completion.

In the conference report on the Army civil functions appropriation bill for 1954 there was a statement authorizing you to use unobligated balances for work on section L–15 of this project. Will you tell us how much you have reallocated for that purpose and what you have been able to accomplish by its use.

Colonel STARBIRD. The contract for L–15 has just been let. As I recall, it was awarded in December, and the amount that we have allocated for the initial work thereon is about $200,000 to initiate the work.

Mr. DAVIS. That is a very small part of the $5 million or so that we found to be unexpended.

Colonel STARBIRD. Yes, sir.

UNOBLIGATED AND UNEXPENDED BALANCES

Mr. DAVIS. What is your situation with respect to unobligated and unexpended balances on this project at the present time?

Colonel STARBIRD. We started the year, sir, speaking in terms of Federal funds, with slightly over $6 million carried over. We have reduced that by December 31 to $3,700,000, and we expect to carry over only $301,000 at the end of this fiscal year.

Mr. DAVIS. That is your expenditures picture.

Colonel STARBIRD. That is the expenditures picture. We will have nothing unobligated at the end of the year. At the present time, we have unobligated $753,000 or slightly more than half the amount we started with.

Mr. DAVIS. It appears during the present fiscal year you are resuming a considerable amount of activity on this project?

Colonel STARBIRD. We are carrying out the maximum activity that the funds permit, sir.

Mr. DAVIS. Which is in contrast to the situation that appeared a year ago.

Colonel STARBIRD. That is correct. We had some design difficulties because we rushed into this project hurriedly after the very disastrous flood of 1947. It is a most complex problem. However, our planning is in hand now, and construction is underway at a rate as rapid as the appropriations permit.

Mr. DAVIS. Tell us something about the problem that you had there within the past few months.

Colonel STARBIRD. I assume you are referring to the flood problem. Beginning in the early summer, rains occurred, sir, which were estimated to have a frequency of approximately once in 10 years. In other words, it was an overly heavy storm.

Those rains began in the early summer and extended until mid-October, as a result of which the area north of Lake Okeechobee on many streams had the highest flood of history; and south of Lake Okeechobee they approached the highest flood of history. All during the summer and fall periods there were constant threats that one of the hurricanes that form up in the Caribbean would move in and due to the high level of Lake Okeechobee and the high level of the streams and to the southeast of the streams would cause an overflow of developed areas and hence very, very serious damage both moneywise and through the heavy loss of life. We might have had a situation much worse than the situation that occurred in the 1928 flood when over 2,000 lives were lost due to 1 hurricane.

Mr. DAVIS. Referring to the map which appears on page 301 of the justifications, will you describe for us the work which you seek to accomplish with the request of $3,620,000?

Colonel STARBIRD. Yes, sir. I will speak in terms of Federal funds only, for that is the amount that you have been using in discussing appropriations.

The Federal funds will be allocated in this manner: If you will look on the map on the upper side, in other words the east-coast side, you will see red marks on four structures. The left hand of those structures connect with a canal C–13. A part of that canal also should be red. That red marking, of course, shows that funds will be spent on those four plus C–13 in fiscal year 1955. With the funds available we will complete the work on C–13 and all of the spillway S–36. We shall complete the work on spillway S–33; we shall complete spillway S–13; and we shall carry on the work already underway on pumping plant S–9. In this particular area, then, we will complete 4 of the 5 units that are underway. We generally have not undertaken the interior works that are authorized, with the exception of the more urgent ones. These, of course, were the more urgent ones. In amounts, we shall put $20,200 on relocations; $223,600 on canals and planning including C–13; we shall put $461,600 on S–13 and S–9; and continue to completion S–33 and S–36.

You will note from the map that there is a black dotted line which represents the so-called east-coast protective levee which has been carried to interim grade and turned over to local interests. That levee is to give a degree of protection to the highly developed area extending about 100 miles along the east coast. You will note also a conservation area. The conservation area shown to the west of that protective area is an area where we can store excessive water.

You will note that we have started with the green in the upper left-hand corner of the map, levee L–7. L–7 is the beginning of a

ring levee to take care of the western side of the upper of the conservation areas. We will continue work on L–7 with the objective of closing to the point shown as S–6 as early as practicable.

We shall also continue work on structure S–5A. S–5A is a very critical pump and spillway arrangement. S–5A allows water coming from out of the developed area east of Lake Okeechobee, the area lying to the left on your map of the green, red, and brown line which is farthest to the right away from Lake Okeechobee—it allows the water that comes out during floodtimes from the agricultural area to either be spilled down along the conservation area or pumped into the conservation area for storage, eventually spilling into the Everglades area. S–5A will be completed with the funds we recommend be put on there in fiscal 1955.

We shall also continue the development of canal L–15. That is the so-called Hillsboro Canal that was built by local interests originally. L–15 might be thought of as having a hump in the middle. It drains both ways. It drains part of the agricultural area south to a pumping station eventually to be put in, S–6. It will, when developed, allow for gravity drainage which the local interests have developed by putting in a secondary system of drains that they estimate will cost $42 million for the authorized first phase.

We shall also initiate work on pumping station S–2. Pumping station S–2 is in an area where the local interests have developed their secondary and on-farm drains to spill water into the existing canals L–14 and L–20. L–14 and L–20 were also developed originally by local interests. They need, however, greater capacity. We shall start the development of L–14, working away from pump S–2. The objective between S–2 and the south end of that canal down in S–6 will be to complete the pumping station and the canal in about 2 to 3 more years.

The amounts in the appropriation request to be applied on these various structures in the agricultural area will be as follows:

To continue the levee work on L–7, to continue the work on L–15, L–12, and L–14, $1,633,000.

To complete S–5A and initiate S–2, $813,100.

We shall also carry on further planning basically to study beyond the authorized first phase, but at the same time to study the heights that the levees around Okeechobee must ultimately be raised to. The raising of those levees, as you can see from the brown marking, is a part of the authorized first phase. We are studying the areas north of the lake to determine the elevations to which those levees must be brought.

This is a cooperative effort, as you know, an effort in which the local interests are undertaking all the work except for the primary system. They are undertaking all the secondary system and the on-farm drainage. Our program is designed to fit in with theirs so that when they get their secondary system developed our primary system will come along to take out the water they would put into the area.

Mr. DAVIS. What is the significance of designating this as the first phase?

Colonel STARBIRD. In 1947, immediately after the flood, the Corps of Engineers got together extremely rapidly a study recommending a development for the overall area roughly 100 miles wide and 200 miles

long. That recommendation called for water control and flood control in basically four areas. Two of those areas only are considered in the authorized first phase, the area of the east-coast cities which is shown on your map north of the black dotted line; and, second, the developed area south of Lake Okeechobee. The Congress considered those recommendations in the omnibus bill of 1948. They stated that they approved the initiation and completion of certain work to give protection to the east-coast cities and to give a protection to the developed agricultural area south of Lake Okeechobee. They did not at that time see fit to authorize construction of the rest of the plan without further consideration.

The only part authorized for construction was that part for the initial protection of the east-coast cities and the protection of the developed area south of Lake Okeechobee.

General CHORPENING. And authorization to go ahead with planning on the remainder of it but not authorization for construction of the remainder.

Mr. DAVIS. This first phase is a completely usable and independent project without regard to these subsequent phases?

Colonel STARBIRD. It is a completely usable one, sir. The protection given in the east coast area, however, approved the putting in of only the more important elements needed for lateral drainage under the first phase. We would continue to study the east coast area and certain other structures would later be required which would call for later authorization.

Mr. DAVIS. This S–2 unit, which is the initiation of a new unit, how far along on your plans are you with that?

Colonel STARBIRD. The S–2 unit in the planning report was reported as having plans and specifications, as I remember, only 60 percent along. That was an old schedule. It should be changed. I have recently checked with the district engineer on all of these units, and he says the plans and specifications for the structure of S–2, the part we are asking for money on, in 1955, will be complete on July 1.

Mr. DAVIS. Where you have several units here that you are planning to get fairly well along toward completion in the 1955 fiscal year, what is the rationale of your not planning to complete those units and then using funds to initiate other new units in the overall project?

Colonel STARBIRD. Actually, we have a decrease in the number of units overall in 1955 upon which we are putting money. To answer your question, sir; it is desirable that the initial element of L–12—working from the north south—be completed at the same time that S–5 comes into play. L–12 and L–10, you will remember, I mentioned as being a humped-back canal. We will get a measure of help just as soon as we start that canal and as we work north.

L–15 we desire to push really for two reasons. One is it will give us a further measure of drainage out of the south central part of the agricultural area, where, as I mentioned, these secondary canals have already been developed. It will also give us access to S–6 ultimately without building a special set of roads down there.

S–2 is an area in which there was a great deal of high water this past year, and when Lake Okeechobee is high that water cannot escape. As soon as we start L–14 we will get a measure of drainage out of the central area of the agricultural area and thereby improve the condition where we were having backwater. As soon as we get to the midpoint

of the humpback we will be able to take all the water to the north of that humpback. S–2 is a structure we cannot complete in 1 year. It involves intricate pumps and quite an intricate structure itself. Therefore we would begin the work now so that we could bring S–2 in by the year after L–14 is complete.

Mr. DAVIS. Will you insert the paragraph numbered 25 of the planning report in the record at this point and then indicate with respect to those features which are designated as being less than 100 percent complete the latest estimate of the cost for completing those particular features?

(The matter referred to follows.)

The following features are now complete: The east coast protective levee consisting of L–8, L–40, L–36, L–35A, L–35, L–37, L–33, L–30, and L–31 (north 10.8 miles) all to intermediate height, except L–8 which is to final height: C–9 (sec. 3), C–11, C–12, C–13 (sec. 1), and C–42; S–24, S–24A, S–29, S–32, S–32A, S–34, S–39, and S–76; and L–43. Present status of features under construction and the estimated status of features soon to be placed under construction on the basis of funds available through June 30, 1954 are as follows:

Feature	Status (percent completed)		Estimated cost to complete feature after fiscal year 1954[1]
	Present	June 30, 1954	
S–11 (1st stage)	99	100	
S–5A–E, S–5A–W, S–5A–S	96	100	
L–7	5	46	$4,206,900
L–1 (sec. 1) (E. 10 miles)	96	100	
S–5A (structure)	32	61	370,300
C–9 (sec. 2)	71	100	
S–13	25	50	69,600
S–5A (machinery, pumps 1–6 incl.)	64	100	
S–9 (machinery)	22	56	189,800
S–33 and S–36	32	90	12,700
L–15 (sec. 2)	0	25	536,400
S–9 (structure)	1	28	785,900
L–8 (grassing)	87	100	
B–8 (railroad bridge over C–9)	0	100	
C–13 (sec. 2)	0	70	49,900

[1] Includes both Federal and local construction cost.

Mr. DAVIS. If I recall correctly last year the committee had some concern over the fact that there had been some changes in the concept and the degree of plans, runoff, and so on, and we asked you to go to the Public Works Committee and bring them up to date on that. I believe I am correct in recalling that that was done. The Public Works Committee did give approval to the present plan of a ¾-inch per day runoff. Is that correct?

General CHORPENING. That is correct, sir.

LOCAL CONTRIBUTION

Mr. DAVIS. This project has many elements of reclamation as well as flood protection in it, and I suppose if I were to ask you why the local contributions are only a little better than 15 percent of the Federal contribution, you would tell me that is the way Congress authorized it. Is that correct?

General CHORPENING. That is correct, but the local contribution is very much greater than the 15 percent. I would like to give you some information on the overall local contributions to this project.

Colonel STARBIRD. In establishing the basis for the contributions, the Congress and the corps did not take an arbitrary basis. They made a calculation of what the overall project would cost and what the overall benefits therefrom would be. They also calculated what benefits were in the nature of flood control and what benefits were in the nature of irrigation and drainage. The major deainage portion of the cost was divided 60 percent to local interests and 40 percent to Federal Government. That, incidentally, was paralleling the policy of the reclamation law. Then the local interests were given credit for the maintenance and operation cost that they would take over. The subtraction of the maintenance and operation costs, the lands and relocation costs, ran to a reduction of the cash contribution so that the cash contribution required would be in the neighborhood of 15 percent. I might say that the project document underestimated the development that would occur in the area and that lands and relocations have run considerably higher than were originally expected.

Also, I would like to point out that in addition to the primary system, as I mentioned before, the local interests must build the entire secondary system and furthermore a great deal of the primary system is an improvement on what local interests have already built. They spent some $15 million on these 4 main north-south canals before we went in there. In the breakdown of the cost, however, we did not consider that as a credit to the contribution to be made. As I mentioned earlier, they estimate their secondary system will cost them around $42 million, and in addition to that their contribution in the form of a cash contribution plus lands, relocations, and the like will run another $26 million; and of course they take over maintenance and operation at an expense of two-thirds of a million dollars a year.

Does that explain the background of the costs?

Mr. HAND. If I should reverse the chairman's question and ask, if in this instance the State of Florida is putting up many millions of dollars in excess of the $15 million plus shown on these specifications, why is it that in projects which are not dissimilar over the country the local contributions are darned near nil? I suppose you will say it is a part of the legislation that we have passed over the years without attempting to rationalize it?

General CHORPENING. To some extent that is true. This project, as has been brought out, is a flood control and drainage and reclamation project. As Colonel Starbird has just said, we, in arriving at a recommendation, applied those laws and policies that are followed in connection with irrigation and reclamation projects. Is that correct?

Colonel STARBIRD. That is correct.

Mr. HAND. I do not know why they were given credit for their maintenance and operation cost. Is it not usual to impose maintenance and operation costs after a project is finished?

Colonel STARBIRD. May I have a statement inserted in the record.

(The matter referred to follows:)

Federal practice in determining the amount to be repaid by local interests for irrigation projects stems from the original Reclamation Act of 1902 and has developed through many legislative amendments of that act up to the present. It is not possible to give a concise quotation from those laws which summarizes the repayment practice. The matter, however, is discussed as briefly as possible in volume 3, water resources law, of the report of the President's Water Resources Policy Commission of 1950.

In brief, under the reclamation laws and program costs allocable to flood control and navigation are charged off as Federal participation. The construction cost of the irrigation part of the project is normally repaid, without interest, in 40 annual installments, after a 10-year development period. This provision for repayment without interest over a period of time has the effect of dividing the total cost about equally between local water users and the Federal Government. Maintenance and operation costs are normally a responsibility of local interests. In specific cases smaller degrees of local participation have been and are being required under reclamation law.

In recommending the project for central and southern Florida, the Corps of Engineers recognized that part of its effect would be reclamation of land or improvement of the productivity of land by water control and worked out a division of cost, conforming generally with reclamation law according to the following principles stated on pages 53 and 54 of House Document No. 643, 80th Congress, 2d session:

"The cost of the part of the project which is for flood control, navigation, and fish and wildlife preservation (35.4 percent) has been considered as a Federal responsibility.

"The cost of the part of the project which is for increased land use (64.6 percent) should be divided between the Federal Government and local interests, because the Nation as a whole and the local people share in benefits due to increased use of land.

"Division of the part of the cost chargeable to increased land use has been made by recognizing the established Federal practice with irrigation projects which results in dividing the first cost equally between the Federal Government and local interest; and in charging local interests with costs of maintenance and operation. This has the effect, on the average over a number of projects, of dividing the total cost (first cost plus maintenance and operation) approximately 60 percent to local interests and 40 percent to the Federal Government. Accordingly, these proportions have been used in dividing the part of the cost of this project chargeable to increased use of land."

Mr. HAND. Is this practice you speak of based on statutory law?

Colonel STARBIRD. Yes.

Mr. HAND. We have spent in excess of $18 million to date on the project. To what extent is the construction accomplished by that $18 million useful of itself if the project went no further?

Colonel STARBIRD. It has a limited usefulness. Again I go to that black levee. It provides a degree of protection from hurricanes and storms that might blow into the Everglades to the east coast cities where damages occurred in 1948. We have completed only a bare start of the internal structures that would take care of rainfalls or the water that comes down the canals into the east coast area.

As far as the agricultural area is concerned, the structures in their current status have little usefulness.

Mr. HAND. Is not this project slightly unique to the extent we are trying to protect Florida against excessive rainfalls and hurricanes?

General CHORPENING. That is correct.

Mr. HAND. It is unique in that respect?

General CHORPENING. Yes, it is unique in that respect, and we have land there that has little change in topography. It is very flat.

Mr. HAND. Off the record.

(Discussion off the record.)

Colonel STARBIRD. Sir, that is a part of the project, but another part is to provide protection against the normal floods which occur during high rainfall periods. As an example, the flood damage this year had no project been in existence would have approximated $18 million. We were able to prevent a part of that flood with structures that are already in. That protection was in the neighborhood of $11 million.

Mr. HAND. So the flood damage in 1953, you estimate, would have been about $7 million.

Colonel STARBIRD. That is correct.

Mr. HAND. If those figures are accurate, they indicate there is a considerable usefulness of the projects already constructed.

Colonel STARBIRD. That is correct.

General CHORPENING. That is not only this project but I think I am correct in saying quite some years ago we did build a protective levee around Lake Okeechobee and I think Colonel Starbird takes into consideration all the structures that have been built.

Colonel STARBIRD. That is correct.

Mr. HAND. When you talk about the catastrophic flood of 1947, that was caused largely by a hurricane, was it not?

General CHORPENING. That is correct.

Mr. HAND. Except for the agricultural interests, what we are largely concerned with here is the protection of Miami, Fort Lauderdale, West Palm Beach, and other resort cities on the coast?

Colonel STARBIRD. That is correct.

General CHORPENING. The loss of life in 1947 was around Lake Okeechobee.

Mr. HAND. In 1947 what you refer to as the catastrophic flood that year was caused not by 1 but by 2 hurricanes; is that correct?

Colonel STARBIRD. I believe that is correct.

SECONDARY SYSTEM

Mr. RABAUT. Did you develop what this secondary phase is?

Colonel STARBIRD. The secondary phase was developed and recommended originally in 1947.

Mr. RABAUT. I do not mean that. I mean the work they are going to do there. What did you refer to that as?

Colonel STARBIRD. Their secondary system. They do their own planning for that.

Mr. RABAUT. That secondary system is a system of pumps whereby they either pump water on the land or pump it off, is it not?

Colonel STARBIRD. It is not only pumps, it consists of——

Mr. RABAUT. Small levees?

Colonel STARBIRD. It consists of the pumps plus a grid work of canals smaller than those we are building.

Mr. RABAUT. That is where they pump the water back in or take it off?

Colonel STARBIRD. It either drains the water off——

Mr. RABAUT. Or pumps it on?

Colonel STARBIRD. Yes.

Mr. RABAUT. That is what you refer to as the secondary system?

Colonel STARBIRD. Yes.

Mr. RABAUT. That is beneficial to the individuals involved, and I suppose the State contributes to that too. It is a big project. I thought there was a movement on foot there to enlarge those areas and not to do so much cross work on them as exemplified in the map that accompanies the justifications, and have the areas extend to a lower position down in the State.

General CHORPENING. That is correct, sir, there is that desire and request on the part of the local interests. We have stated that to effect that change would require modification of the authorization.

Mr. RABAUT. Further, they said to me when I was down there on a checkup of this project a little over a year ago, that they felt some money could be saved in doing it that way.

General CHORPENING. That is correct with regard to the overall plan.

Mr. RABAUT. Greater recapture of land could be accomplished.

General CHORPENING. We are in complete agreement with the local interests on the proposal they have made. It will save money on the overall project. However, it is not the type of modification that the Chief of Engineers feels can be made within his authority, and we have advised the local interests that such modifications as they desire would have to be approved by the Public Works Committee.

Mr. RABAUT. Could it be done without legislation?

General CHORPENING. Probably not. I think it would require further legislation.

Mr. RABAUT. I think, Mr. Chairman, our committee ought to take cognizance of it because a saving can be made here under this proposal and over and above that there would be the recapture of a great deal of land which eventually would bring a return to the Government in the way of taxes.

General CHORPENING. None of the construction we are proposing with the funds requested herein would be affected by the modification proposed.

Mr. RABAUT. I am glad to know you agree with the local people down there.

Mr. RILEY. General, I recall that last year you had a tentative completion period of 7 years for this project. Your recommended appropriation of $3.5 million would seem to me to extend it to 15 or 18 years if that policy is continued. Am I right in that assumption?

General CHORPENING. It would be completed in 1963 under present plans. However, we, as has been brought out earlier by Colonel Starbird, have caught up with our engineering and construction planning so that should it be desired, we could expedite the construction.

Mr. RILEY. If you had additional money?

General CHORPENING. Yes.

Mr. RILEY. Are the local interests keeping up with their part of the construction so that you would not be hampered if you were able to expedite the work?

General CHORPENING. Yes, sir. If anything, the local interests have been ahead of the Federal Government in providing the rights-of-way and other requirements.

Mr. HAND. By the time you have completed this project, if you do, in 1963, and have spent $111 million, you will not have protected Miami and West Palm Beach from flooding by hurricanes, will you?

General CHORPENING. We will have gone a long way toward protecting them from water that due to hurricanes might be brought in along the east coast.

Mr. HAND. From Lake Okeechobee?

General CHORPENING. And from the interior part of the peninsula.

Mr. HAND. But you will have done nothing to prevent the hurricanes from dropping water on the streets of those cities from the Atlantic Ocean?

Colonel STARBIRD. The local interests are building this secondary system and there are other canals they have built.

Mr. HAND. But by the time the local interests have completed their secondary system you still have not protected the streets of Miami and West Palm Beach from the waters that come from the Atlantic Ocean?

Colonel STARBIRD. No, sir.

THURSDAY, JANUARY 21, 1954.

KAWAINUI SWAMP, OAHU, T. H.

No construction funds available.

STATEMENT OF AVERAGE ANNUAL BENEFITS

Located on the southeastern portion of the island of Oahu, approximately 12 miles northeast of the city of Honolulu, the proposed project will provide a high degree of flood protection for the town of Kailua. It is currently estimated that 1,700 dwellings and business establishments lie within the flood zone as compared with a total of 742 estimated in 1947, an increase of more than 100 percent, giving an indication of the rapid rate of expansion and development of the community.

In addition to providing a high degree of flood protection for the town of Kailua, the project would considerably lessen the pollution of Kailua Beach. The beach is badly polluted by swamp mud, and under present conditions cannot be used for a period of from 3 to 5 weeks after a flood occurrence. It is estimated that the project would result in average annual benefits of $165,100.

Average annual charges: The annual charges are estimated at $45,203.

Data on continuing contracts

Description of work:	*Total estimated contract earning*
Continuing contracts in force	None
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955: (*a*) Channel—Oneawa Channel	$787,200

Mr. DAVIS. The first project this morning is Kawainui Swamp, on the island of Oahu. The total estimated flood-control cost is $911,900, and there have been appropriations to date in the amount of $39,700.

The amount of that appropriation indicates it has probably been for planning only.

We have before us a request for $500,000 for fiscal year 1955.

Since this is a project that is new to the committee, will you give us the background on the project, and tell us what has bene done, and what you propose to do?

Colonel STARBIRD. Yes, sir. As far as what has been done, the money spent so far has been used for the definite design study. The plans and specifications for the first element of the work will be complete by June 30, 1954.

As to a description of the project, this is a small project on the east side of the island of Oahu, as is shown on your map. That side, incidentally, is the wet side of the island. The island is divided into a wet side, a middle section that is moderate, and a west side that is very dry.

The project would carry water from a swampy area, Kawainui Swamp, to the ocean. The water comes into the swamp through drainage from the very high mountains just behind the swamp.

The area protected would be basically the town of Kailua, which is rapidly growing, and only 10 miles from the city of Honolulu. It is just outside of the recently reactivated Kaneohe Naval Air Station. There are certain other military installations on the small Kailua

Point. There is a small residential area, which is rapidly growing, in addition to business activities connected with the military and residential population. As you probably know, the area for suitable residential locations on the island of Oahu is quite limited.

This project was selected on the basis of several criteria. First, it was a small project that could be completed in 2 years; and second, it had a very high benefit to cost ratio. The local interests have put in a small but insufficient flood-control channel.

Considering the benefits to be expected from that channel plus our improvements, as contrasted with the cost of that channel and our improvements, the benefit-cost ratio would be 3.67.

The channel, incidentally, which was put in by local interests, was put there after authorization of the project. Even if we considered only the incremental benefits due to the construction of added work by the Federal Government and the incremental costs, the project would have a benefit-cost ratio of well over 2.

There is a high local contribution effected on this project and assurances have been furnished to the Government in addition to the completion of that small channel which the local interests undertook on their own initiative at a cost of $159,000. Those additional assurances will include an estimated $186,600 for lands and relocations. Local interests will, of course, furnish these and also will maintain and operate the works after completion.

As I mentioned earlier, we have good assurance that the necessary local cooperation will be forthcoming as expected.

Mr. DAVIS. What has been the effect on the overall cost of the decision to reclaim a part of this land for residential purposes?

Colonel STARBIRD. There has been a slight reduction, sir, due to the decision to reclaim this, a reduction brought about by the fact that the project document contemplated the construction of a control structure where on the map the words "mile 161" appear.

That control structure will no longer be necessary. The actual channel built today is in connection with drainage of the swamp as much as with providing a measure of interim flood control for the town in view of the flood that occurred there in 1951.

BENEFIT-TO-COST RATIO

Mr. DAVIS. How have you arrived at this very favorable benefit to cost ratio of 3.67 to 1?

Colonel STARBIRD. The 3.67 is the benefit-cost ratio, sir, of the project as a whole, assuming that the local project had not been completed. As I mentioned, earlier, the local project was built after authorization.

The average annual benefits—and they are all flood-control benefits—that would be effected in such a situation, are $165,000, and the annual charges would be $45,000.

However, if you assume that the project had not been authorized when this local installation was made and the authorization came later and we considered this as being just an increment on something that already existed, we estimate that the incremental benefit for the high-frequency storms, considering the development expected in the area, would average $79,600 annually and that the incremental annual charge would be $35,000.

Mr. DAVIS. It is your proposal to initiate this project in fiscal year 1955, and complete it in fiscal year 1956; is that right?

Colonel STARBIRD. That is correct, sir.

Mr. DAVIS. Who owns the land in the swamp that will be reclaimed as a result of this project?

Colonel STARBIRD. I cannot answer that positively, sir. I believe the land is owned by private interests.

COORDINATION WITH PLANNING COMMISSION OF THE CITY AND COUNTY OF HONOLULU

Mr. DAVIS. Paragraph 20 of your planning report indicates the Planning Commission of the City and County of Honolulu is giving consideration to reclamation of about 200 acres in this same spot.

How does that dovetail with this Federal project?

Colonel STARBIRD. The swamp was originally used for the storage of water that came down off the hills and the mountains behind, and was used for irrigation purposes. It existed for that purpose.

In other words, it served as a benefit to the local interests. The channels that we recommended are needed for flood control and the channels would be needed, whether or not that reclamation occurred. It is probably true that there will be a slight increase in the rapidity of runoff due to having solid material on the ground rather than the water.

Even that is problematical; it might be the same or even less.

Mr. DAVIS. Has there been complete coordination between what the city and the county is planning to do in this area with what you are proposing here this morning?

Colonel STARBIRD. It is my understnading that there has been complete coordination. I answer that way, sir, because we always coordinate with the local interests before we undertake authorization of planning.

We also keep abreast of anything that they do that changes that plan. When we prepare the justification for any appropriations we secure a report relative to any controversies or changes which would affect the budget presentation.

Mr. DAVIS. I think we should know just what has been done in the way of coordinating these two building projects.

Evidently the fact that you are reclaiming some of this area for residential purposes that you did not previously contemplate, indicates that there has been some change of thinking as this has come along, and we do not want to be put in the position of providing funds to go ahead with this as presented, and then find that further engineering changes may be necessary which might change the nature and scope of the project if you come up against something that may be contemplated or under way in the city and county of Honolulu?

General CHORPENING. It seems to me from reading this paragraph here, and I have no direct knowledge in regard to the negotiations, but what we are saying is that the work that is considered by the Planning Commission of the City and County of Honolulu would be subject to flood even with the allowance of protection afforded now by the pilot channel that has been built by local interests, but we can recheck the situation out there with our area office, to be very certain that whatever is contemplated is not going to require some later modification, and we can place that into the record, if desired.

Colonel STARBIRD. Sir, I would like to point out that there has been coordination in the sense that we are eliminating the control structure. Also, as I did not mention earlier, we are increasing the capacity of the channel from 6,400 cubic feet per second to 12,300 cubic feet per second. The net overall effect of the elimination of the control structure and the increase of the channel is to reduce the cost estimate by $105,800.

Mr. DAVIS. You have a swamp area of 698 acres, and your planning report indicates that the Planning Commission of the City and County of Honolulu has recommended the adoption of a plan to reclaim the entire swamp area. You also state that local private interests have under study a plan to reclaim 200 acres.

Evidently, there is some conflict, at least, between those two; is there not?

General CHORPENING. There might be a conflict. I do not know.

Colonel STARBIRD. The project report states, sir, that the total area of the swamp is 690 acres. In other words, what is happening is that the board of supervisors is considering the 200 acres already under consideration by private interests.

Mr. DAVIS. Is it true that your plan is based on the anticipation that all or part of this is going to be reclaimed for residential purposes, rather than to be used as storage, sir?

Colonel STARBIRD. That is correct, sir.

Mr. DAVIS. If it had been used as storage, it would probably cost you something in the neighborhood of $100,000 to do this job?

Colonel STARBIRD. That is correct.

Mr. DAVIS. Everyone is now agreed that it is going to be used either completely or partially as a reclamation project for residential purposes, with no storage contemplated. This plan before us is sound, on an engineering basis, whether they reclaim all or just part of the swamp. Is that about the size of it?

Colonel STARBIRD. That is about correct, sir.

Mr. DAVIS. Have you claimed benefits here for the reclamation of any previous work?

Colonel STARBIRD. We have not; these are flood-control benefits.

Mr. HAND. Colonel, this is essentially a project to drain this 700-acre swamp, is it not?

Colonel STARBIRD. No, sir; not to drain the swamp. It is to prevent the runoff from a basin of about 12 square miles which passes through the swamp from overflowing when it falls heavily into the town.

Mr. HAND. What is the general nature of the proposed construction?

Colonel STARBIRD. It is a simple channel, sir; a channel with a length of approximately 9,600 feet, and a width of 160 feet, with an elevation, basically, about 8 feet lower than mean sea level.

Mr. HAND. The project is designed primarily to carry the excess water to the ocean?

Colonel STARBIRD. That is correct.

Mr. HAND. Is this a natural waterway?

Colonel STARBIRD. There may be a slight waterway there, sir. If there is, it is insufficient. It appears that the primary drainage from that area now is into the irrigated areas and to the Kaelepulu Pond.

Mr. HAND. There is some natural waterway that runs all the way to the ocean?

Colonel STARBIRD. There is not any appearing on the map, sir. This area is all, basically, very low and flat, until you get behind the swamp where it rises very, very steeply.

Mr. HAND. What did I understand you to say the depth of this channel was proposed to be?

Colonel STARBIRD. It is 8 feet below mean sea level, sir.

Mr. HAND. It would be an 8-foot channel in depth; is that right?

Colonel STARBIRD. No, sir; it is a little deeper than that in places.

Mr. HAND. When you say "a little deeper," what do you mean?

Colonel STARBIRD. It appears to be, sir, from a diagram, in the neighborhood of 15 feet maximum.

Mr. HAND. It varies from 8 feet to 15 feet; is that right?

Colonel STARBIRD. That is right.

Mr. HAND. What is the general nature of the area sought to be protected?

Colonel STARBIRD. There are very few roads through the mountains and, in fact, only one real passage through the mountains here, and you will note from the map that the main highway passes along the coastal area.

There has been considerable development at Kailua, and that is a small business area for the surrounding plantations that generally are along the coast in about a 2-mile-wide sweep. In addition, there were 1,700 residences in the town in 1951, which is in contrast to approximately 700 in 1949. These residences are generally of the frame, or brick and stone type, and they are probably what would normally be called middle-class houses.

As I mentioned earlier, this business section, in addition to serving the surrounding plantations, also serves the military installations that are on Kailua Point.

Mr. HAND. What is the flood history there, and the extent of damage done by floods?

Colonel STARBIRD. I cannot give you an exact flood history, sir. One of the more recent floods, which we estimated to be a flood of about 15-year frequency caused damage in 1951 of approximately $250,000. There are frequent floods in the area, and there is the possibility of very great floods because of the mountains. You will have unusual cloud conditions crossing from the east, and those mountains cause considerable precipitation in this area.

Mr. HAND. Would it be fair to say that an area of this general character—swampy with backwater—can be duplicated over and over again throughout the continental United States and its Territories and possessions?

Colonel STARBIRD. There are many areas that have a situation where water falls behind in the basin and threatens the town.

General CHORPENING. It is somewhat similar to the Los Angeles area.

RECAPTURE OF LAND

Mr. RABAUT. I notice here you say that the most important single factor that has direct bearing on the urgency of the project is the recent activation of the former Kaneohe Naval Air Station as a permanent overseas Marine Corps air station.

I also notice that you mention the fact that private interests were seeking to recapture some of this land. What was the acreage involved there?

Colonel STARBIRD. About 690 recaptured acres altogether. Private interests had a plan to recapture 200 acres, but the total area capable of recapture above the project is around 690 acres, including the 200 that the private interests planned on.

Mr. HAND. Is that all of the land that the local interests have; they only have 200 acres of the 690 acres?

Colonel STARBIRD. No, sir; if you will glance at the map, you will see that the area we are referring to as being a recapture area is the area which is the swamp proper.

The flood-control protection given is to the city of Kailua and to the area to the south of Kailua, and just to the north of Kailua.

Mr. RABAUT. In this Kailua area here, is that where the recapture is going to be?

Colonel STARBIRD. No, sir, the recapture is in the swamp above it.

Mr. RABAUT. But, that is all privately owned land?

Colonel STARBIRD. As far as I know, it is, sir. The normal practice out there is for a group of individuals on a plantation to build up various storage basins for irrigation and it is probable, therefore, that this area is largely owned by private interests.

Mr. RABAUT. I suppose their system of recapture of water is about the best in the world; is it not?

Colonel STARBIRD. They have a very extensive one. They even capture water on one side of the range, and take it through the mountain range to then irrigate and use on the other side.

Mr. RABAUT. Yes, I know. I made a survey there at one time.

General CHORPENING. The city of Honolulu gets its water out of tunnels.

Mr. RABAUT. You have to get the water from the sky, because all the water adjacent to the island is salt water.

General CHORPENING. It is difficult to keep the level of the salt water sufficiently low.

Mr. RABAUT. Is this canal really going to be for the benefit of just private interests, or is it really so, that it is going to be for the benefit of what you call the most important single factor, which is flood control.

That is the point I am trying to bring out.

Colonel STARBIRD. The project was authorized and we are building it because it is a flood-protection project, and not for the recapture of land.

Mr. RABAUT. I notice here that the total appropriations to June 30, 1953, amount to $39,700?

Colonel STARBIRD. Yes, sir.

Mr. RABAUT. When was that money appropriated?

Colonel STARBIRD. $28,000 was appropriated in 1952, and $11,700 in 1953.

General CHORPENING. Those were planning funds.

Mr. RABAUT. That was planning money, and it was all of recent origin and appropriation?

General CHORPENING. Yes, sir.

Mr. RABAUT. The project is designed to be a 2-year project?

Colonel STARBIRD. A 2-year construction project; yes, sir.

Mr. RABAUT. And you people are really recommending it?

Colonel STARBIRD. Yes, sir.

Mr. RABAUT. How much is the local contribution?

Colonel STARBIRD. The local contribution is estimated—it is in the form of work to be accomplished on lands and relocations—and it is estimated at $186,600, yet to be spent, but they have already spent $159,000 in their channel improvement.

LUCKY PEAK RESERVOIR, IDAHO

Date	Unobligated balance	Unexpended balance
June 30, 1953	$1,570,347	$3,090,210
Dec. 31, 1953	1,253,143	2,155,460
June 30, 1954 (estimated)	303,200	303,200

STATEMENT OF AVERAGE ANNUAL BENEFITS

Located on the Boise River, 10 miles southeast of the city of Boise, Idaho, the project will provide flood-control benefits throughout most of the 60-mile reach of the Boise Valley extending downstream from the project site to the river's mouth. This area with its high-crop productivity comprises some 56,000 acres. Additional benefits will be obtained by preventing flood damage to urban areas, interruption to rail and highway traffic. Adjacent lands containing irrigation canals and intakes would receive flood-control benefits from the project by preventing crop losses resulting from floods damaging the irrigation works and cutting off water supply to some 134,000 acres of land. The average annual benefits are estimated at $1,134,500 of which $1,039,900 is for flood control, $20,000 for recreation, and $74,600 for irrigation.

Average annual charges: Estimated average annual charges are $804,000.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Road relocation, State Highway 21	$3,050,000
(*b*) Revisions to Arrowrock Dam	246,000
(*c*) Dam, spillway, and outlet works	2,743,600
(*d*) Hoisting machinery and appurtenances	99,400
(*e*) Manifold valves and gates	300,000
Proposed in fiscal year 1954 but not yet in force:	
(*a*) Reservoir clearing	72,000
(*b*) Utility relocation, telephone and power lines	76,600
Proposed in fiscal year 1955	None

Mr. RILEY. The next project to be considered is the Lucky Peak Reservoir, near Boise, Idaho.

I note that the total estimated Federal cost is $19.3 million, and the total appropriations to date are $16,455,000, and you are asking this year for $1,750,000?

Colonel STARBIRD. Sir, this project is a flood-control project basically, on the Boise River about 60 miles from that river's mouth, and about 10 miles above the city of Boise. There are about 56,000 acres of land below the dam in the flood-control plain, and there are about 70,000 residences in the valley.

The area is subject, and has been subject in the past, to very heavy flood runoff from snow melt, and spring storms. Incidentally, I might mention that the Department of the Interior has already constructed two dams upstream primarily for irrigation. However, we have recently worked out with the Department of the Interior an agreement whereby the system of the three dams will be operated more effectively both from the point of view of flood control and irrigation.

The outlet structure, incidentally, is built so that power can one day be installed if necessary.

Mr. RILEY. We have some information that this lower dam backs the water up against the face of one of the Interior Department dams. Is there anything to that claim?

Colonel STARBIRD. I believe that is correct, sir, and the authorizing document provided that no damage would be done to the dam at the head of our reservoir.

General ITSCHNER. That is correct. It was done after a study indicated that that was the most economical way to build the project.

Mr. RILEY. Was this dam constructed with the full knowledge that such a situation would develop?

General ITSCHNER. Yes; it was, and with the full concurrence of the Bureau of Reclamation.

Mr. RILEY. You have coordinated the matter with the Bureau of Reclamation, and they are satisfied with it; is that right?

General ITSCHNER. They are satisfied with it.

Mr. RILEY. What about this overlapping situation? Does that depreciate the usefulness of either one of these lakes?

General ITSCHNER. Sir, the sum total benefit is greater with the overlap. It is really customary in dam construction to overlap the lower dam a slight amount on the upper one, because the net results are greater.

So, the bureau concurred in that, and we are actually paying them for a small amount of remedial work that has to be done on their dam, which is called the Arrow Rock Dam, in order to take care of this water which is backing up on it.

That work is presently in progress and should be completed very soon.

Mr. RILEY. What is the cost of that remedial work?

General ITSCHNER. $260,000.

Mr. RILEY. Is that included in the total cost?

General ITSCHNER. Yes, sir; it is included in the cost of this dam.

Mr. RILEY. Did that increase your original estimate any?

General ITSCHNER. The original estimates took that into account, sir.

General CHORPENING. You will note that there was no increase in the cost estimate this year, and that last year we reduced the earlier cost estimate by $2.7 million on this project.

PROJECT NEAR COMPLETION

Mr. RILEY. I note that under the schedule which is set up that the $1,750,000 appropriation will bring this project to 94 percent of completion.

Colonel STARBIRD. Actually, the work involved after fiscal year 1955 is work of a somewhat indefinite scope at the present time. It will be primarily slide protection work on areas where road slides have already and will probably continue to occur at some time in the future.

What I am saying is that this brings the project to substantial completion, except for the slide repair, and for certain final cleanup work on the dam; for recreation facilities, if ever built, and for certain miscellaneous appurtenances.

Mr. RILEY. How far back does the Government own from this high-water mark of the lake; would you say?

Colonel STARBIRD. The land purchases are substantially all complete.

General ITSCHNER. The real estate acquisiton has been completed, and the distance back from the lake is dependent upon the taking lines which follow the normal real estate tract lines, and therefore, it is quite irregular, but we would not take any more than necessary to include the height of the reservoir, plus the height of the waves on it, and in a few places we would include the bluffs which were dangerous from the standpoint of slides.

Mr. RILEY. You could arrive at that by calculating the number of acres still to be acquired, and the number of acres which you own.

General CHORPENING. Of course, this is a flood-control dam, and you will appreciate that a great amount of the land, except during floods, is not under water, but this land acquisition has been carried out under the earlier policy on which we had a discussion some days ago, where we bought in fee simple all the land that would be flooded under the design flood for which the reservoir is built.

Mr. RILEY. That is the thing that intrigues me at this time. I am still a little bit baffled as to the presently stated policy, and I am afraid we will run into trouble on that, but we will see.

Mr. DAVIS. The unexpended and unobligated balances appear to be identical estimates as of June 30.

Colonel STARBIRD. We have carried through 1954, and I believe some earlier years, an amount for slide repairs. Although certain slides have occurred they have not developed to the extent originally anticipated.

That accounts for the carryover.

General ITSCHNER. Additional slides are likely to occur after the water is brought up to pool level.

Mr. HAND. This project is almost completed, is it not?

Colonel STARBIRD. That is correct.

Mr. CEDERBERG. There is no local participation on this project?

Colonel STARBIRD. No local participation.

Mr. RABAUT. This is a project where the improvements will go into the future?

Colonel STARBIRD. That is correct.

Mr. RABAUT. I notice that it is getting well on toward completion. The land acquisition is 92 percent complete; relocation, 75 percent; reservoir and pool 62 percent; dam, 75 percent. The access roads, of course, do not come along until you are near the end, and are only 4 percent complete.

What about this construction of the recreational facilities; how much money is to be devoted to that purpose? Nothing on that has been done as yet.

Colonel STARBIRD. That is correct.

General ITCHNER. There is no money requested for that at this time.

Mr. RABAUT. No money requested. How much is the estimate?

Colonel STARBIRD. $64,000 is carried as the requirement; that is for planning and for installation at some future time.

Mr. RABAUT. That is in the future?

Colonel STARBIRD. Yes.

Mr. RABAUT. And you say that the grounds improvements and utilities will be constructed during the fiscal year 1955. What does that amount to?

Colonel STARBIRD. The operator's quarters and operational building amount to $94,400—requested in fiscal year 1955.

Mr. RABAUT. And that is included in this amount?

Colonel STARBIRD. That is included in this amount.

Mr. RABAUT. The entire project with the money requested for 1955 will be 94 percent complete?

Colonel STARBIRD. It will be approximately 94 percent complete.

BEARDSTOWN, ILL.

No construction funds available.

STATEMENT OF AVERAGE ANNUAL BENEFITS

The entire city of Beardstown and the adjacent lands are subject to flooding during high stages in the Illinois River. The project will provide protection to this city, with a population of 6,080 (1950), and to the agricultural lands within the Lost Creek, South Beardstown, and Valley Drainage and Levee Districts, a total of approximately 15,000 acres. Within the city of Beardstown there are a number of industries, including railroad facilities, which will also receive flood protection benefits. The average annual benefits are estimated at $213,000.

Average annual charges: Annual charges are estimated at $143,000.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
1. Continuing contracts in force	None
2. Proposed in fiscal year 1954 but not yet in force	None
3. Proposed in fiscal year 1955: Floodwall	$893,100

Mr. DAVIS. The next project is Beardstown, Ill., which has been rather frequently called to the attention of the subcommittee by people other than the Corps of Engineers. It has a total Federal estimated cost of $3,898,500. The appropriation to date for planning has totaled $60,000, and the request before us at this time is $400,000, for the fiscal year 1955.

Since this is a request to initiate construction on this project, will you give us the background, the nature of the project, and tell us what you propose to do with the requested funds?

REPLACEMENT OF FLOODWALL

Colonel STARBIRD. The project is basically the replacement of a section of floodwall, which has failed, a 220-foot section, and the raising of the wall so as to exceed the elevation of the flood of 1943. In addition, we propose to raise and modify certain levees so as to give protection to the city of Beardstown, as well as 15,000 acres of agricultural land around the city.

This project is one which has a high benefit-cost ratio, 1.49 to 1. It is a project that is relatively small, and can be constructed in a short period of time. The plans are well along and the first section can be completed in June 1956. The first section will include the part of the wall that was destroyed. Only temporary replacement has been made thus far, and much of the floodwall section is construed to be inadequate from the point of view that it has already been exceeded at the highest flood.

I might mention that a large additional section of the wall, which was built by local interests back in 1928 and 1929 has been examined and found to be in danger of possible failure from further high water. It is sitting on a sand base, which is not considered sound. The actual failure of the section of the wall occurred in 1948.

The damage from the 1943 flood was extremely heavy, in that it exceeded $4 million. However, under present price conditions the damage would be in the neighborhood of $6,500,000.

Mr. DAVIS. With the $400,000 you propose to begin the work on the replacement of the floodwall that has failed right in the city of Beardstown?

Colonel STARBIRD. That is correct. It would not be economical to undertake a little section, so we are continuing to carry on work on additional sections of the wall, which must be raised in elevation over 7 feet, and strengthened.

Mr. DAVIS. Your construction schedule calls for completion of the entire project in a short time; of the levees in the agricultural area as well as the floodwalls in the metropolitan district of Beardstown by 1960?

Colonel STARBIRD. By 1960, but that basically around Beardstown area by 1958.

Mr. DAVIS. Your planning has been brought up to date for the completion of this project?

Colonel STARBIRD. Necessary design will be complete on June 30. The definite design studies are 60 percent complete for the overall, and they will be 90 percent complete by the end of the fiscal year 1954. The detailed designs on the plans and specifications for the floodwall itself will be completed by June 30.

Mr. DAVIS. Would you say that your planning is sufficiently completed so that we can rely on this figure of $3,985,500 as being beyond question, sufficient for this overall project?

Colonel STARBIRD. We consider that it is far enough along to provide a firm estimate. I could not guarantee it, however, without question since there are the uncertainties of nature and the like.

LOCAL PARTICIPATION

Mr. DAVIS. What are you getting in the way of local participation?

Colonel STARBIRD. The local participation on the project itself consists of the normal four different types of assurances. First, they will provide the lands and rights-of-way; second, the protection for the Government against damage; third, they undertake any necessary relocations other than railroad relocations; and fourth, they provide for the maintenance costs.

The estimated cost initially to the local interests is $50,000; that, of course, is exclusive of maintenance and operation, and it is exclusive of the very high costs that have heretofore gone into this project through construction by local interests of levees and walls.

One other fact I might mention, that there was a very large expenditure made for emergency purposes in 1943 by the Federal Government and by the local interests. I do not have the amount.

Mr. DAVIS. I do not know whether it has been brought out that this is on the Illinois River?

Colonel STARBIRD. I have not. It is on the Illinois River, and is about mile 98.

Mr. HAND. This is essentially a local flood-control project.

Colonel STARBIRD. It is a local flood-control project; yes.

Mr. HAND. It has no relationship to any other flood-control project with the exception of protecting the town of Beardstown, which is a place of about 6,000 population, and the surrounding agricultural acreage to which you referred?

Colonel STARBIRD. That is correct.

Mr. CEDERBERG. Do you know whether the location of this particular project along the river here makes any problem at some future date somewhere else along the river?

Colonel STARBIRD. I do not think that would be correct; no. In the first place, there is a substantial part of the levee wall already there, so anything other than an unusual flood would still fall on the same area.

Mr. CEDERBERG. Do you have any similar problems to this up and down the river?

General CHORPENING. I know of none myself; I know of no problem in the immediate area similar to this.

And I might say, that in the design of these flood-protection projects we must and always do very carefully study them to be sure that in building them we do not set up a problem in some other area, some greater flood problem. I am sure you will recall up and down the Mississippi River the fact that we do not want to get a levee higher on one side of the river than the other.

Mr. RABAUT. This project received its first money for planning in 1953; is that right? $40,000 and the $20,000 additional for planning in 1954.

Colonel STARBIRD. I believe that is correct; I am not positive.

Mr. RABAUT. That is according to the justification.

General CHORPENING. I am not too sure that the $40,000 was in the fiscal year 1953; some of it might have been fiscal year 1953 appropriations transferred to this project during fiscal year 1954.

Mr. RABAUT. Up to date you have got $60,000 for planning. How much is unexpended at this time?

Colonel STARBIRD. We will have to furnish that for the record. I do not have the figures, but a substantial part of it has been used. There is no further requirement for planning funds prior to construction. The request of the $400,000 is for construction in 1955 and the eventual cost to the Government will be $3,898,500.

(The matter referred to above follows:)

Funds were allocated to the Beardstown project for planning purposes as follows:

Fiscal year 1953	$30,000
Fiscal year 1954	[1] 30,000

[1] Includes $20,000 transferred to the project in fiscal year 1954 from prior year appropriations to other projects.

The unexpended balance in the Beardstown project on December 31, 1953, was $25,200.

LOCAL PROTECTION PROJECTS, UPPER MISSISSIPPI RIVER

Mr. HAND. The next project for the committee's consideration involves 7 projects on the upper Mississippi River, 6 of them are located on the Illinois side, and 1 on the Missouri side, and for the record they are as follows:

On the Illinois side, the Clearcreek Drainage and Levee District, the Degognia and Fountain Bluff Levee and Drainage District, East St. Louis and vicinity, the Grand Tower Drainage and Levee District, the North Alexander Drainage and Levee District, the Preston Drainage and Levee District, and the Wood River Drainage and Levee District, and the Perry County Drainage and Levee District.

It is my understanding that there are very definite relationships between these projects, having to do with protection of the land, particularly in the upper Mississippi, and I think it would be at least convenient to consider them at one time.

Before we take up the details of any one of the projects, the committee would appreciate a general statement from you as to the nature of the project, and what is proposed in the way of protection.

General CHORPENING. Yes; Colonel Starbird has a map which I think will be helpful to the committee in that regard.

Colonel STARBIRD. I think it would be helpful, if you would take a look at this map.

This is the top of the reach of the river in which these several projects are located. The map runs down to this juncture point, [indicating] and comes on down to this region.

On this regional section of the river there is a 150-mile reach, basically from the Wood River project, which is the upper one of the group, down to East Cape Girardeau, the lower of the projects. There are 20 projects in all, and of those 20, eight are completely funded. One additional would be brought to completion with the funds which we are requesting for the fiscal year 1955.

The basic scheme throughout the reach of the river is one of improvement.

Mr. HAND. I think it might be helpful, if you would state for the record those that are completed.

Colonel STARBIRD. Very well.

Mr. HAND. You can insert them in the record, if you prefer, to save time.

(The matter referred to follows:)

The seven completed projects are:

1. Miller Pond Drainage and Levee District.
2. Fort Charters and Ivy Landing Drainage and Levee District.
3. Prairie Du Rocher and vicinity.
4. Strington-Fort Charters Ivy Landing Drainage and Levee District.
5. Harrisonville and Ivy Landing Drainage and Levee District.
6. Columbia Drainage and Levee District No. 3.
7. Chouteau, Nameoki and Venice Drainage and Levee District.
8. East Cape Girardeau and Clear Creek Drainage District.

Colonel STARBIRD. There are 20 projects, as previously stated, of which 8 have been completely funded. The estimated cost of the overall project is approximately $80 million, and of that $80 million around $50 million, or approximately 62 percent, has been appropriated to date.

The basic scheme here is to give protection from approximately the 50-year flood to the agricultural areas, and basically all of the areas are agricultural up the river until you come to the East St. Louis, and the Wood River projects.

Now, the scheme is also designed to give protection to the industrial area from the 200-year flood as contrasted to 50-year flood for the agricultural area.

Mr. HAND. Why is that, Colonel?

Colonel STARBIRD. Because industrial areas have a much more concentrated development; also those industrial areas would have a much greater impact, if destroyed, on some of the surrounding communities, than would areas that are agricultural in nature.

Local interests have in general constructed levees that parallel or are used in our new levee system.

They have constructed them over a long period of years, and generally they have been proven inadequate in the various high rainfalls and in the runoff periods, and there have been some of them that have failed, and failure threatens with each one of the major floods which come down the Mississippi.

We are recommending a total of $3,190,000 for the 8 projects you have already mentioned. Those 8 projects are those upon which some coloration appears on the map. I will point them out.

The Clear Creek project, the North Alexander project, the Preston project, the Grand Tower project, the Dogognia and Fountain Bluff project, the Perry County project, the East St. Louis project, and the Wood River project.

Mr. HAND. On the assumption that the $3,190,000 requested for the fiscal year 1955 is appropriated, how much of a problem will you have financially for the completion of this entire project in the 20 subdivided aspects?

Colonel STARBIRD. As I mentioned, the total appropriation to date is approximately $50 million, slightly over $50 million of the estimated cost of almost $80 million. It would bring it down roughly 4 percent further toward total completion.

Mr. HAND. About $30 million ahead of us to appropriate; is that correct?

Colonel STARBIRD. That is about right.

Mr. HAND. There is an estimate of $80 million for the overall project. Is that the present estimate of the work?

Colonel STARBIRD. That is the estimate as of now; it is about $79,700,000.

General CHORPENING. As of July 1953.

Mr. HAND. As of July 1953?

General CHORPENING. Yes. Our estimates here, unless we state otherwise, are based on July 1953 prices, the estimated cost at that time. That is the standard procedure for each year; we re-estimate our projects as of July each year.

Colonel STARBIRD. There are two points that I believe I should mention: One was described last year. That was a new set of features that we had found were necessary for these relatively high levees to prevent their failure in certain sections during periods of relatively high water where there was underlying pervious material.

Mr. HAND. Let me interpose this question: This is entirely a levee project, is it not?

Colonel STARBIRD. Not entirely; it is a levee——

Mr. HAND. Where it is not, you will so indicate to the committee.

Colonel STARBIRD. It consists of levees, walls, and pumping plants in the industrial area.

Mr. HAND. Yes.

Colonel STARBIRD. And there are railroad relocations involved; the local interests are handling the matter of lands and rights-of-way; guaranteeing the Federal Government against damage; taking care of relocations other than railroad relocations; and providing for the maintenance and operation of the project after completion.

LOCAL CONTRIBUTION

Mr. HAND. Are you in position to estimate the cash value of the local contribution?

Colonel STARBIRD. I do not have it overall. I have it for the individual projects in the 1955 budget.

Mr. HAND. You have provided it by project.

Colonel STARBIRD. Yes, by project. I could get the overall figures if you want them.

Mr. HAND. If it is not too much trouble, I think it would be helpful.

Colonel STARBIRD. Very well.

In connection with that again, the local interests have made very, very sizable contributions to date on the structures that they have already put in, that we are improving.

(The matter referred to follows:)

The estimated cost of the requirements of local cooperation for the overall Mississippi River project from Alton, Ill., to Gale, Ill., is $4,910,800.

Mr. HAND. Now, reverting to my previous question, to get clear on this: So far as the agricultural areas are concerned, it is entirely a levee project, is it not?

Colonel STARBIRD. It is a levee, plus the relocations, plus the putting in of the gravity drains, not pumping plants. In other words, when the water falls behind the levee during periods of high flood, it stays there until such time as the river goes back down.

Mr. HAND. But with respect to the industrial areas you also have structures and pumping plants.

Colonel STARBIRD. That is correct. We could not afford to leave a large impoundment over an extended period in these industrial areas, and therefore there are pumping plants in addition to the levee and flood-wall protection.

SEEPAGE CORRECTION

I mentioned that last year there were certain measures added that were described to you; they were what we call seepage correction, and I shall not describe them again unless you desire it.

Mr. HAND. You have considerable seepage there?

Colonel STARBIRD. You have very considerable seepage there; yes. With a very great hydraulic head, you have a situation where the ground and the levee made up in the top layer of very impervious material, but very, very coarse material below. You have a situation where the head transmits the pressure underneath the impervious material below the ground level. In fact, you might think of it as being very much similar to that of an inner tube, with the inner tube being that impervious layer, and the air pressure in the tube being comparable to the pressure under the levee.

Now, as with an inner tube, if you put in the means of allowing the pressure to escape, such as a pinhole, and you build up the pressure,

the tube does not burst. On the other hand, if a large pressure is built up in the tube the tube may burst. So if behind the levee you have a sizable weak spot, and pressure develops, you will get a boil or burst, which, in time, will cause the failure of the levee.

Mr. HAND. Has there been any major change in your seepage, any new discoveries, or any new approaches to the control of the seepage problem since you discussed this problem last year?

Colonel STARBIRD. There has been no change in the solution. As of last year we were still running our surveys to find out all the areas where we had this pervious material below ground, where the pressure would develop. We are substantially through with that. There have been minor increases in cost for seepage control revealed by those surveys since last year.

Mr. HAND. In other words, since last year, you have found additional spots in this project where seepage correction has been found to be necessary.

Colonel STARBIRD. That is correct. And the program is now substantially complete, and we think we have a relatively firm estimate now.

Mr. HAND. This accounts for some of the increases in cost which we now have before us?

Colonel STARBIRD. That is correct.

COMPARISON OF CURRENT AND ORIGINAL ESTIMATES

Mr. HAND. Before we leave that cost comparison, Colonel, are you in position to say how the overall estimate of $80 million now compares with the original estimate?

Colonel STARBIRD. It was $10,291,000. These projects were authorized generally a long time ago, beginning in 1936, with the first start in 1938, so that has been quite a long period of time ago, with quite a bit of additional development and flooding, and the present day project has undergone many changes since first authorized in order to provide adequate protection as originally proposed.

There is a second thing I would like to mention that has caused increased costs this year. These increased costs due to the second feature have been offset somewhat by the saving effect on actual contracts. However, there have been additions to the work proposed by a set of features, whose estimated cost is around $4 million.

Those features for the several projects, where they will be put in, are in the nature of emergency features. When we built these projects, we took our borrow from the riverside and we created thereby a ditch, generally on the river side, 100, 200 feet wide, quite a shallow ditch. The very high floods on the Mississippi River have in the past been relatively infrequent. Unfortunately, however, in the last 5 to 6 years, we have had 3 big floods that have approached the flood of record. The result has been that: Instead of the willows growing up in these depressions, and instead of those depressions being filled by siltation from minor overflow over a period of years, there has been a scouring. We recognized that possibility at the time the levees were first planned and construction initiated. But we felt that the probability of the occurrence of storms such as these I have mentioned was so unlikely as to enable us to complete the project without this difficulty. In other words, we felt that the willows

would grow up in those places, and we would not encounter serious erosion. The erosion has occurred in some cases, and there are whole pockets caused by eddies, below the embankment area. Many are right at the toe of the embankent and are 10 to 15 feet deep. We feel that this condition is dangerous to the levee, and therefore that added features of borrow protection must be put in, and as quickly as possible. Actually we are starting in 1954 with some of the borrow protection to some of these levees.

Mr. HAND. If I understand you correctly, when you were engaging in this construction, you took the soil from the river close to the bank of the river.

Colonel STARBIRD. Close to the levee, back from the river. The levee is set back quite a little way from the river. We took it from between the levee and the bank of the river, which distance will roughly average a quarter of a mile.

Mr. HAND. As a result of the frequency of these fairly heavy floods since that time you have not had a chance to get at the growth, the typical growth of the willows, and the silting of the places from which you took the top off the bar.

Colonel STARBIRD. That is exact.

EMERGENCY MEASURES

Mr. HAND. Now you talk about the emergency measures that were caused by the unfortunate circumstances, that you have mentioned. What are those emergency measures?

Colonel STARBIRD. What we are doing, sir, is backfilling the more critical areas or holes. We are also planting willows in certain sections, and where we may get a further damage we plan on small jetties away from the dikes in an effort to try to block the water from eating.

Mr. HAND. Do you consider that if these measures were not undertaken, the levees would be definitely threatened under present circumstances?

Colonel STARBIRD. Definitely threatened.

Mr. HAND. Is there anything else you want to add to your general statement?

Colonel STARBIRD. No, sir.

Mr. HAND. Can you give us an estimate, in the overall project, of the amount of agricultural acreage land to be protected by this project?

Colonel STARBIRD. I do not have that acreage with me. I will be glad to insert it in the record. I have it for some projects.

Mr. HAND. Will you also put in the overall summary of it?

Colonel STARBIRD. Yes.

(The matter referred to follows:)

The details on the acreage protected by each of the Mississippi River projects in the 1955 budget are covered under the statements on benefits for each project. The total area protected by the Mississippi River levee project from Alton, Ill., to Gale, Ill., totals 320,300.

Mr. HAND. Also supply for the record a summary of the number of cities and towns and industrial areas protected by the overall project?

Colonel STARBIRD. Yes.

(The matter referred to follows:)

The overall project will provide protection to 47 towns and cities and the industrial area estimated to be protected would be about 94,300 acres.

Mr. HAND. The other features that you speak of, the emergency protection that you will give, as the result of the threat to the levees, because of the original borrow, you have told would cost in the overall project about $4 million.

Colonel STARBIRD. That is correct.

Mr. HAND. This is a new item.

Colonel STARBIRD. Yes.

Mr. HAND. Now, in addition to that, you have, over and above the matters you testified to last year, some newly discovered areas where seepage control is necessary. Can you give us the overall cost of the control of that seepage in those newly discovered areas?

Colonel STARBIRD. I cannot give you that in total, sir.

Mr. HAND. Would those two items, together, account for all the increased cost that you have given, as against the last time we had the estimate for the project?

Colonel STARBIRD. I do not think so. There have been cost changes, compensating cost changes, and some of those cost changes, of course, have occurred on projects that are not in the budget this year. The estimated cost this year is $80 million, or about $3.5 million increase since last year for the same group of projects.

Mr. HAND. Net difference in the overall.

Colonel STARBIRD. Yes. But there are compensating changes generally. The main changes I mentioned total the $4 million.

Mr. HAND. But you have some changes downward.

Colonel STARBIRD. Yes.

CLEAR CREEK DRAINAGE AND LEVEE DISTRICT, ILLINOIS

Mr. HAND. I think it might be well, even though it is out of order, to pick the project, Clear Creek Drainage Levee District, and discuss these cost changes a little bit further.

Now, in that one particular project the total estimated cost of which is now $4,636,000, you were showing us the increased costs for the modification, based on additional studies, soundings, and final investigations for underseepage corrective measures of $291,200. Now, that is a part of the newly discovered seepage you have to correct?

Colonel STARBIRD. Each year whether or not we get an appropriation, we bring forward the new estimate. A large part of the increase since this project was last presented to Congress is due to price-level increase and amounts to about $1,200,000, and a part, I believe, of the underseepage, was in the last estimate given. In other words, we escalate year by year and some of the seepage work might have been picked up earlier and escalated through price-level increases, while some additional might have been picked up as a result of further studies.

Mr. HAND. Let me get this straight about this particular project you have referred to. Is that the cost of the newly discovered seepage, or does that increase result from the estimated increased costs that you have already told us about?

Colonel STARBIRD. I'm not sure of the answer to that. It may be that we did not carry any seepage corrective measures in the estimate of last year. The planning report states the studies of

the project since last submitted to Congress has shown the need for that $291,000.

Mr. HAND. You are talking now about Clear Creek?

Colonel STARBIRD. Clear Creek; yes.

Mr. HAND. That was not shown to the committee last year at all?

Colonel STARBIRD. That is correct, sir. Actually the last appropriation on this project was in 1948, and the last cost estimate given to the Congress, not the last estimate we made, but the last cost estimate given to the Congress was on the basis of the 1946 base, which was given in the justifications in the fiscal year 1948 budget.

Now, I do not know exactly when we picked up the need for the $291,000 for seepage on this particular project. We can check that and put that in the record.

(The matter referred to follows:)

An estimate for seepage corrective measures was first included in the project estimate prepared in connection with the 1949 budget.

Mr. HAND. The next additional item of cost since you last informed us, is the modification based on studies and investigations of the borrow-pit corrective measures, which is one of the other main increases in cost you have been telling us about, and that in this instance was $210,000, as I understand, or was that a short time before?

Colonel STARBIRD. Although we knew that certain scourings had occurred, we did not know whether or not it was serious enough last year to warrant taking emergency measures.

I would like to mention that the three floods that have caused this damage were in July 1947, July 1951, and July 1952, showing that there was a progressive worsening. It has been under study during the last year. We had our best hydraulic people there during the last spring and summer, and they went over the situation and concluded that we could not afford to let the situation go on.

Mr. HAND. Again referring to this particular project, the Clear Creek project, you have given us the increased estimates in cost of $1,200,800, resulting from price changes since the 1946 estimate, price changes, in the cost index, I presume, from 1946 to 1953.

Colonel STARBIRD. That is correct.

Mr. HAND. Could that have been disclosed to the committee before? We have been given these changes a little bit too suddenly.

Colonel STARBIRD. This project was not before you for an appropriation. So we were not reporting the details of what had happened to this project last year.

UNEXPENDED BALANCES

Mr. DAVIS. Generally speaking, I notice, that looking at the item of unexpended balances, that it has very substantially cleared itself up in the course of the last year.

Colonel STARBIRD. Yes. That is due to two things, of course. First, this is a difficult type of work hard to schedule so as to get down to the unexpended balance to approximately zero. There are a lot of little features of work, each one of which is difficult to schedule accurately, and to undertake independently of the others; it is all tied into a most comprehensive undertaking.

In the second place, the appropriations last year, as I remember them, were all substantially lower than the amount we felt necessary. The appropriations were about $1,850,000.

Mr. DAVIS. The only other thing I noticed here, you would not expect to get down to zero, or close to it by the end of this year, was this one that Mr. Hand mentioned, the Clear Creek Drainage District. You have some particular problem that caused that, did you?

Colonel STARBIRD. Yes, sir. We have had a problem in getting the rights of way for the seepage corrective measures. We anticipate that we will be able to carry on this work in fiscal year 1955.

LOCAL INTEREST

Mr. DAVIS. Now, in connection with the obligations introduced by the local interests for the maintenance of the levees you have mentioned, to bring them up to the design standard, what precautions does the Corps of Engineers have against the local communities failing to live up to their responsibility?

General CHORPENING. Well, we have, of course, the assurance from all these levee districts that they will do those things. And, as I have stated earlier during the hearings, we make periodic inspections of the maintenance being carried on by the local levee districts and the local interests, and call to their attention any inadequacies of maintenance that we find, and discuss it with them. Now, in the usual case we do get very excellent cooperation in maintenance. We do have a few instances where we do not get it. I believe that it probably would be possible to resort to the courts for action, but to my knowledge we have never done that as yet.

Mr. DAVIS. Where the work is still in progress, of course you do have some sort of club in the fact they either have to do the job of maintenance on the finished portions that is required, or I suppose you can just say to them "We are not going ahead any further?"

General CHORPENING. That is correct. I was speaking of the case where the project is completed.

Mr. DAVIS. Now take the case where it has been completed and you have lost that kind of a club: You state you feel it would be possible to go into court on the basis of their violation of their contract. Now does that assurance, as you refer to it, permit you, for instance, to go in and do the job that needs to be done and charge the cost of that back to the local community?

General CHORPENING. I do not think that we could get the job done, for this reason: usually the reason, or very often the reason, maintenance is not carried out is because the local interests have financial difficulties in raising the funds needed. That being true, the chances of being able to go in and do it by the Federal Government and get reimbursed would probably be rather slim.

Mr. HAND. The reason they do not raise the money in 9 cases out of 10 is that they do not impose the tax rates necessary to do it. And in almost every case they probably have a legal right to impose taxes to the limit for the purpose of meeting their municipal obligations. If they do not do it, it is because they do not want to use their taxing power, maybe because it is around election time. But they have a legal right, generally speaking, to impose taxes without limit for the purpose of carrying out their municipal obligations.

General CHORPENING. This carrying out by the local interests of their obligations is really a difficult problem. I might point out one other element of it You are familiar with our emergency authoriza-

tion under which we are authorized to go out and do construction work on an endangered flood-control structure, if it is beyond the local capacity, we are authorized to rebuild a flood-control structure that has been damaged by floods and we are authorized to do rescue and flood-fighting work during emergency flood conditions.

Now, that emergency authority is known to the local interests and they realize if the maintenance is not kept up and if a flood impends and they cannot do anything about it, we will step in; that we are not going to let the levee fail because of that situation; and that we are going to step in and repair it later. That is legislation that now exists. I point that out because that facet of the problem enters into this quite a little.

Mr. DAVIS. That is a situation which tends to discourage maintenance, rather than encourage it; is it not?

General CHORPENING. Yes, sir. I do want to make this point again, that we are talking about a very relatively minor percentage of the local flood-protection projects. There are very many flood-protection projects and I made the statement earlier in this hearing that I would say at least 90 percent are doing an excellent job and are very proud of the job they are doing. You gentlemen have seen some of those; you may have seen, too, some where they are not doing such a good job. But it is very definitely in the minority.

Colonel STARBIRD. In connection with these particular items, I have been over all of these this year with the district engineer. Except for minor points that we felt should be corrected, they were well maintained.

Mr. DAVIS. We have had some discussion about this before; but, in this connection, it occurred to me again that you are always going to have a great maintenance problem in these areas we are talking about this morning.

General CHORPENING. Actually, anywhere along the Mississippi River, from here on down, the flood problem is so alive in their minds at all times and we have not had and we do not expect to have this difficulty. But, generally, where the difficulty occurs is on a river where they have a big flood which is followed by a number of years in which they have no floods during which time they become apathetic about it; and there is not a specific consciousness of the danger in which they place themselves if they do not take care of this maintenance.

(Discussion off the record.)

SEEPAGE PROBLEMS

Mr. CEDERBERG. It is my understanding that local interests in past years have had a number of levees all along this particular area.

Colonel STARBIRD. That is correct; but they have not always been complete. They sometimes put the levee in along the river front, then you get a flanking action. And in at least two places I saw, the levee was merely a frontline levee and a turnback.

Mr. CEDERBERG. Have they had seepage problems with their levees?

Colonel STARBIRD. Yes, sir, thay have had seepage problems with their levees. I do not know of any failure that occurred. There was one district where I was shown an area—I believe it was in the Preston

District—where the whole area was just pock-marked with pin boils during the last high water, and they almost lost the levee.

Mr. CEDERBERG. Is it reasonable to say that the seepage problem is in proportion to the size and height of the levee?

Colonel STARBIRD. No; proportionate to the depth of the water against the levee.

Mr. CEDERBERG. The depth is determined by the ultimate flood stage?

Colonel STARBIRD. That is correct.

Mr. CEDERBERG. If we did not design it to the last high flood stage, could we reduce some of the seepage problems, or would that be too risky?

Colonel STARBIRD. I think probably it would be too risky. If you wanted to carry it to a point where you would not get real protection, it would naturally save initial construction costs. By cutting down on the size of the levee you would save on construction funds, but that would not give the protection you need.

Mr. CEDERBERG. In other words, you would not reduce the amount of seepage problem anywhere near the reduction of safety that is involved, and the ultimate cost, probably?

General CHORPENING. That is correct.

Mr. CEDERBERG. So the fact is we just have to build levees at that height and solve the seepage problem the best way we can.

General CHORPENING. Yes.

Mr. RABAUT. The seepage problem here is accentuated by the condition of this soil, which is alluvial soil; is that correct?

Colonel STARBIRD. Yes, sir. If you get very, very fine material all the way down the riverbank then, of course, you have little seepage problem; but you get a seepage problem where you have fine material on top and fine material in the levee and coarse material below. And you cannot tell by observation on the surface of the ground where you have to put it in; you actually have to run borings.

Mr. RABAUT. Now, the repair is usually done with stone?

Colonel STARBIRD. The seepage repair is accomplished by putting in the pinhole a small pipe so that the pressure cannot develop and the water can seep out. These pinholes are behind the levee. The borrow correction work is on the front side of the levee to correct borrow pit scouring. Sometimes the material for borrow pit correction is the kind you mention.

Mr. RABAUT. And in that area there is very little rock. You have to transport that?

Colonel STARBIRD. It is several miles back to the high ground. I can't say exactly where they get their rock.

Mr. HAND. I think I asked before, in connection with practically all of those projects, they are closely and ultimately integrated with the whole control problem designed in this area?

Colonel STARBIRD. They are integrated in the whole control problem designed for this area. Although it might be possible that there are 1 or 2 levees which would protect a certain given area, in the entire group of levees mentioned above, it is conceivable that in the high flood of record, if a unit went out above it might result in having one below go out, even though they were protected by separate levees.

Mr. HAND. I assume also, in the case of a high flood, those to a very considerable degree would be of usefulness to other projects?

Colonel STARBIRD. That is correct.

RIGHTS-OF-WAY BY LOCAL INTERESTS

Mr. HAND. In paragraph 19 of one of your planning reports on these projects, you say in regard to the status of local cooperation: "Local interests have to provide the necessary rights-of-way for all construction work except for seepage-control measures." Why is there that exception?

Colonel STARBIRD. Is that the Clear Creek project again?

Mr. HAND. Yes.

Colonel STARBIRD. In Clear Creek, we have gotten cooperation of a certain group. By cooperation, I mean the local interests have been able to go ahead and acquire the rights-of-way.

Mr. HAND. With respect to seepage control?

Colonel STARBIRD. With respect to seepage control. This work, of course, takes added rights-of-way. You cannot just move in to the foot of the levee and start work; you must have necessary working room and proper working area, and that takes further rights-of-way.

Mr. HAND. Generally speaking, you have worked out the local obligations on seepage control in Clear Creek?

Colonel STARBIRD. In a part of Clear Creek.

Mr. HAND. How about the others?

Colonel STARBIRD. We are only going ahead when we have the clearance. There are two drainage and levee districts in which the authorities have indicated that they do not want this work to be accomplished right now. We are still trying to prove to them why these measures are necessary. But, in general, in the others have gone ahead and given assurance and are trying to get the rights-of-way that are necessary.

Mr. HAND. You intend, I presume, to press for the necessary rights-of-way to take care of all of these corrective measures so far as seepage control is concerned?

Colonel STARBIRD. That is correct.

Mr. HAND. Because, whether they want it, or not, you consider it is necessary to have that in order to protect the levee they have?

Colonel STARBIRD. It is more than "we consider it"; it is necessary.

Mr. HAND. If you meet with much further difficulty in connection with getting the necessary rights-of-way, do you have in contemplation resorting to condemnation for this purpose?

General CHORPENING. Since the rights-of-way must be obtained by the local interests, it will be a matter of what measures the local levee districts, which have that responsibility, intend to take. They try very hard, and I can see how they would, to get these individual landowners in line. They know nothing about engineering and it is very difficult for some of them to be convinced that this in effect is necessary and that they must furnish the rights-of-way. But I think by the process that the man on this side does it and the man over here [indicating] also agrees to it, they more or less convince the middleman of its necessity.

Mr. HAND. Then your answer is that the Government does not contemplate any condemnation proceedings even in the last desperate stage of this thing, because it is the obligation of the local interests to provide the rights-of-way.

General CHORPENING. That is correct.

Mr. HAND. Suppose they do not provide them; then what happens? Again I point out does it not necessitate some ironbound contract with the levee district which requires them to do what they are supposed to do and, incidentally, would require you to use your powers if they could not get it from the individual farmers?

General CHORPENING. I am sure I do not know what power they have with regard to condemnation, at this time. I agree that it should be given to them, if it is not already.

Mr. CEDERBERG. You do not build the levee until all of those rights-of-way are acquired, do you?

Colonel STARBIRD. We have a problem there. We have already built the levee in most of those cases where seepage has been proven to exist, so this takes added rights-of-way.

Mr. CEDERBERG. In other words, you build the levee and do not know whether seepage is going to take place or not; is that correct?

Colonel STARBIRD. We did not know we were going to require seepage control until the last 2 years. Since we have found that we do, we are now attempting to secure all necessary rights-of-way including that for seepage control before we accomplish the levee work. But there are levees constructed prior to our determination and where consequently, we did not know the nature of the seepage; therefore the local interests must give us new assurances; they must take action to get the land beyond that contemplated at the time we considered construction.

Mr. CEDERBERG. In the future, would it not be good policy for the corps to assume that seepage will take place and require the local interests to provide the rights-of-way, and thus avoid facing a fight; or is that not practicable?

General CHORPENING. We are now trying to foresee as much of this requirement as we can. It was not foreseen originally that this work would be required. If we had had a reasonable question in our mind about it originally, we might have done so; but we did not think until the latest flood experience that these measures would be required. We are now convinced they are required.

CLEAR CREEK DRAINAGE AND LEVEE DISTRICT, ILLINOIS

Date	Unobligated balance	Unexpended balance
June 30, 1953	$98,387	$101,225
Dec. 31, 1953	92,987	95,613
June 30, 1954 (estimated)	54,000	54,000

STATEMENT OF AVERAGE ANNUAL BENEFITS

This project is in Union and Alexander Counties, Ill., on the left bank of the Mississippi River between river miles 57 and 66 above the mouth of the Ohio River.

When completed in combination with and upon completion of the authorized work in the Preston, the North Alexander, the Miller Pond, and the East Cape Girardeau and Clear Creek districts, will provide protection to an area to 51,000 acres of highly productive agricultural lands, and upon completion of all track raises (relocations) now under contract will allow uninterrupted operation of the Missouri Pacific Lines between East St. Louis and the Southwest.

Average annual benefits, all flood control, are estimated to be $413,000.

Average annual charges: Average annual charges are estimated at $321,000.

Data on continuing contracts

Description of work:	Total estimated contract earnings
Continuing contracts in force	None
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955:	
(*a*) Levee embankment and drainage facilities (item VI B)	$289,000
(*b*) Seepage control measures (item VII A)	206,600

Mr. HAND. The first is Clear Creek Drainage and Levee District, Illinois. The total estimated Federal cost is $4,636,000; total appropriation to June 30, 1953, is $2,680,200; total appropriations to date are that same figure, which brings the project to 58 percent of completion. The amount requested for 1955 is $310,000, which will bring the project to 64 percent of completion. The balance required to complete the project is $1,645,800.

How long has it been since we have appropriated for this particular project?

Colonel STARBIRD. The last appropriation was for the fiscal year 1948.

Mr. HAND. So that something has been discovered in the meantime which practically requires resumption; is that so?

Colonel STARBIRD. No, sir. The original plan contemplated essentially all of the features of this project that are now proposed; it was just that there has been more urgent work in other levee districts.

Mr. HAND. This project in general consists of the raising and enlarging of the existing levee system by the construction of approximately 10.9 miles of river front levee and 10.1 miles of back levee. Is that so?

Colonel STARBIRD. That is correct.

DEGOGNIA AND FOUNTAIN BLUFF LEVEE AND DRAINAGE DISTRICT, ILLINOIS

Date	Unobligated balance	Unexpended balance
June 30, 1953	−$11,631	−$6,576
Dec. 31, 1953	436,885	665,135
June 30, 1954 (estimate)	None	5,100

STATEMENT OF AVERAGE ANNUAL BENEFITS

This project, located on the Mississippi River and in combination with and upon completion of authorized work for the Grand Tower Drainage and Levee District will provide flood protection benefits to a total area of 51,000 acres. Flood protection benefits will be afforded to approximately 29,500 acres of land in the Degognia and Fountain Bluff Drainage District alone. This area includes the bottom lands between the river and the bluffs between Cora, Ill., on the northwest and the Grand Tower Drainage and Levee District on the south. Additional benefits will be derived from uninterrupted operation of important railroad lines. The average annual benefits for this project, based entirely on flood prevention, are estimated to be $403,700.

Average annual charges: The annual charges are estimated to be $224,200.

Data on continuing contracts

Description of work:	Total estimated contract earnings
Continuing contracts in force: Seepage control measures (item VI B)	$228,800
Proposed in fiscal year 1954 but not yet in force: Levee embankment and drainage facilities (item V B)	158,200
Proposed in fiscal year 1955: Levee embankment and drainage facilities (item V A)	447,300

Mr. HAND. The next project is the Degognia and Fountain Bluff Levee and Drainage District, Illinois. The total estimated Federal cost is $6,078,000; appropriations to date, $4,461,000; amount requested for fiscal 1955 is $550,000, which will bring the project to 82 percent of completion. The balance needed to complete the project is $1,067,000.

What is your general plan for the expenditure of that $550,000 during this fiscal year, Colonel Starbird?

Colonel STARBIRD. We will start and complete one small relocation for $5,500; we will continue the work we started on the back levee shown on the map at a cost of $235,600, we will continue seepage work at a cost of $55,800, and continue drainage work at a cost of $91,700. This work will be carried out with the appropriation request and a very small amount available from a loan made earlier to this project, which, incidentally will need to be repaid from the requested appropriation. This loan amounts to $166,500.

EAST ST. LOUIS AND VICINITY, ILLINOIS

Date	Unobligated balance	Unexpended balance
June 30, 1953	$772,667	$1,442,990
Dec. 31, 1953	705,405	863,113
June 30, 1954 (estimated)	None	186,200

STATEMENT OF AVERAGE ANNUAL BENEFITS

Approximately 71,000 acres of highly developed industrial and urban areas comprising the city of East St. Louis, Granite City, Madison, Venice, Brooklyn, Fairmont, and Monsanto, Ill., will receive flood-protection benefits. Further advantages will be derived from the project by the prevention of disruption of manufacturing and railroad operations caused by flooding. The average annual benefits, all flood control, are estimated to be $6,254,800 based on current costs.

Average annual charges: Total annual charges are estimated to be $483,200.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Levee embankment, item IV–A	$242,300
(*b*) Levee embankment, item I–A	180,600
Proposed in fiscal year 1954 but not yet in force:	
(*a*) Levee embankment, items III–B and III–C	518,100
(*b*) Seepage control, item V–A (1)	405,000
(*c*) Seepage control, item V–A (2)	267,800
(*d*) Pumping plants, item V–B (1)	132,000
(*e*) Pumping plants, item V–B (2)	100,000
(*f*) Pumping plants, item V–B (3)	120,000
Proposed in fiscal year 1955	None

Mr. HAND. The next project is East St. Louis and vicinity, Illinois. The total estimated Federal cost is $12,871,000; total appropriations to date, $5,869,200. The current request before us is $650,000, which will bring the project to 51 percent completion. Balance necessary to complete after fiscal year 1955 is another $6,351,800.

What is your proposed expenditure of the $650,000 which you now request?

Colonel STARBIRD. Here we are continuing the levee which is now almost completed. The work proposed will continue the flanking levee at a cost of $250,000; we are continuing seepage work at a cost

of $241,100; continuing closure work at a cost of $41,300, and continuing work on 3 pumping plants and certain drainage works, at a cost of $303,800. That covers the 1955 program of work with the carryover plus the requested appropriation.

It might be noted that, in line with the compensating changes I mentioned earlier, there is a reduction here since last year's estimate on this project of roughly $500,000.

Mr. HAND. The committee is gratified to hear about it.

In this project, or in any of the remaining projects, is there any unusual feature that should be brought now to the attention of the committee? Are you having any unusual difficulties, either with respect to railroad relocation, or anything else?

Colonel STARBIRD. There are none.

Mr. DAVIS. You have this listed as a benefit-to-cost ratio of 13 to 1. You are sure that is not a misprint?

Colonel STARBIRD. No, sir. This is an area that is the center of 11 major railroads. It is one of the most highly industrialized areas along the Mississippi River. It is very concentrated. The protection is given for a relatively small cost for the amount of the dollar value invested in the area concerned.

General CHORPENING. Among other things, it has one of the largest Engineer supply depots, possibly the largest, that we own right behind this levee.

Mr. RILEY. Is this one of those areas where you provide protection for something like a 200-year flood?

Colonel STARBIRD. Yes, sir. This is one of the higher degrees of protection.

GRAND TOWER DRAINAGE AND LEVEE DISTRICT, ILLINOIS

Date	Unobligated balance	Unexpended balance
June 30, 1953	$265,331	$706,392
Dec. 31, 1953	30,208	139,456
June 30, 1954 (estimated)	None	35,000

STATEMENT OF AVERAGE ANNUAL BENEFITS

This project is located along the Mississippi River in Jackson County, Ill and in combination with and upon completion of authorized work for the Degognia and Fountain Bluff Levee and Drainage District, will provide flood-protection benefits to a total area of 51,000 acres. Flood-protection benefits will be afforded to approximately 12,000 acres of land in the Grand Tower District alone and to many of the important railway lines located in this area. An estimated $262,600 in average annual benefits will be derived from flood protection exclusively.

Average annual charges: The average annual charges are estimated to be $178,800.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Railroad relocations	$412,500
(*b*) Levee embankment and drainage facilities (item IIF and IIG)	568,400
Proposed in fiscal year 1954 but not yet in force: (*a*) Seepage control measures (item IIIA)	189,300
Proposed in fiscal year 1955	None

Mr. HAND. The next project is Grand Tower Drainage and Levee District, Illinois.

The total estimated Federal cost is $4,800,000; total appropriations to date, $3,933,500; amount now before us, requested, of $390,000, which will bring the project to 90 percent completion. Balance to complete after fiscal year 1955 is $476,500.

What, in general, are your plans for the expenditure of the $390,000?

Colonel STARBIRD. We will continue the relocation at the southeast corner of the project, a railroad relocation over a stream, the Big Muddy River, at a cost of $50,400. We will complete the levee section along the northeast corner, at a cost of $28,000. We will continue and essentially complete certain seepage work at a cost of $156,900, and continue and essentially complete drainage work that goes with the levee section underway. We will also repay a loan that was borrowed from this project during 1954.

Mr. HAND. Out of this appropriation?

Colonel STARBIRD. Yes, sir; out of the appropriation requested.

Mr. HAND. What is the status of the Missouri-Pacific Railroad relocation and the reason for the increased cost now before us of $229,300 in connection with that relocation?

Colonel STARBIRD. I will have to put that in the record.

Mr. HAND. You will supply that for the record.

Colonel STARBIRD. Yes, sir.

(The matter referred to follows:)

The cost of relocation of the Missouri Pacific Railroad at the Big Muddy River crossing is divided between the Grand Tower and Preston Drainage and Levee District projects. The original agreement with the Missouri Pacific Railroad which included the relocation of their facilities at this location was signed in August 1947 and contemplated that they do their own detailed design and construction with repayment from the Federal Government on a cost-plus-fixed-fee basis. The preparation of detailed plans by the Corps of Engineers solely for estimate purposes would therefore represent poor economy. Detailed plans for the work proposed were not furnished to the Corps of Engineers until 1953. During the interim period and in the absence of detailed plans and estimates of cost, the district engineer has been estimating the relocation work by escalation in line with the rise in the construction cost index of an original estimate made in 1945 which was prepared at that time based on very preliminary plans. The estimate furnished in connection with the 1955 budget for both the Grand Tower and Preston Drainage and Levee District projects, although somewhat higher than last year's estimate, represents the current estimate based on the detailed plans and costs as recently furnished by the railroad and reviewed in detail by the Corps of Engineers.

NORTH ALEXANDER DRAINAGE AND LEVEE DISTRICT, ILLINOIS

Date	Unobligated balance	Unexpended balance
June 30, 1953	−$24,998	−$24,699
Dec. 31, 1953	158,719	158,719
June 30, 1954 (estimated)	None	75,800

STATEMENT OF AVERAGE ANNUAL BENEFITS

This project, located on the Mississippi River, in Alexander County, Ill., is an integral part of 5 separate interrelated flood-control projects comprising the districts of Preston, Clear Creek, Miller Pond, and East Cape Girardeau and Clear Creek. Average annual benefits for the 5 projects as a whole are estimated to be $413,000 based on flood protection being provided to an area of 51,000 acres of

highly productive agricultural land. Uninterrupted operation of the Missouri Pacific Lines between East St. Louis and the Southwest will also result from completion of the project and all track relocations now under contract.

Average annual charges: Average annual charges are estimated at $321,000.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force	None
Proposed in fiscal year 1954 but not yet in force: Levee embankment and drainage facilities (item 1)	$364, 300
Proposed in fiscal year 1955: Railroad relocation, Missouri Pacific RR	220, 000

Mr. HAND. The next project is the North Alexander Drainage and Levee District, Illinois.

The total estimated Federal cost is $1,129,500; total appropriations to date, $624,500; the amount before us, requested is $505,000, which will complete the project.

Will you tell us, Colonel, your proposed expenditure of the $505,000?

Colonel STARBIRD. Yes, sir. You will note on the map that this is a back levee. We intend to use the funds to complete railroad relocations at a cost of $237,000; to complete the levees at a cost of $383,900; complete the seepage measures at a cost of $85,800; and complete the drainage structures that go with the levees at a cost of $19,400.

The $505,000, plus the carryover, will permit us to effect completion of the overall project including repayment of a loan.

Mr. CEDERBERG. I assume as soon as this project reaches completion it will be officially turned over to the local interests to maintain. You do not wait until the entire project is completed, but each segment is turned over individually?

Colonel STARBIRD. That is right.

PRESTON DRAINAGE AND LEVEE DISTRICT, ILLINOIS

Date	Unobligated balance	Unexpended balance
June 30, 1953	$181, 047	$249, 896
Dec. 31, 1953	31, 302	138, 988
June 30, 1954 (estimate)	None	53, 200

STATEMENT OF AVERAGE ANNUAL BENEFITS

This project, when completed, will in conbination with and upon completion of the authorized work in the North Alexander, the Clear Creek, the Miller Pond, and the East Cape Girardeau and Clear Creek districts, provide protection to an area of 51,000 acres of highly productive agricultural lands. The project will provide protection to these lands and, upon completion of all track raises (relocations) now under contract, will allow uninterrupted operation of the Missouri Pacific lines between East St. Louis and the Southwest. Average annual benefits, all flood control, are estimated to be $413,000.

Average annual charges: The average annual charges are estimated at $321,000.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force: (a) Railroad relocations, Missouri Pacific RR	$412, 500
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955	None

Mr. HAND. The next project is Preston Drainage and Levee District, Illinois.

The total estimated Federal cost is $2,444,000; total appropriations to date, $1,713,000; amount requested for 1955 is $175,000, which will bring the project to 77 percent completion. The balance thereafter required to complete is $556,000.

Will you tell us generally what you propose to do with the $175,000?

Colonel STARBIRD. Yes, sir. The funds available to us in fiscal year 1955 on the basis of the request plus the carryover will be used as follows: A very small amount for the embankment, $5,300; and the remainder to continue railroad relocation across the Big Muddy River. That is the same relocation I spoke of a moment ago.

Mr. HAND. What is the status of your railroad relocations there and the reason for the increase in cost as shown to be $150,600?

Colonel STARBIRD. That is the same railroad, and the same crossing I mentioned earlier in connection with the Grand Tower project; it is the other end of the same crossing. The data to be furnished in connection with the Grand Tower project will also furnish this.

(The data appear on p. 310.)

WOOD RIVER DRAINAGE AND LEVEE DISTRICT, ILLINOIS

Date	Unobligated balance	Unexpended balance
June 30, 1953	$63,089	$589,486
Dec. 31, 1953	81,992	179,975
June 30, 1954 (estimate)	None	None

STATEMENT OF AVERAGE ANNUAL BENEFITS

The project is located on the Mississippi River in Madison County, near Alton, Ill. Flood protection benefits will be provided to about 13,700 acres of land, the major portion of which is devoted to industrial and urban uses. The important industrial cities of Hartford, Wood River, Roxana, East Alton, and a portion of Alton, Ill., are within the area to receive flood protection benefits. A number of highly developed and specialized industries are located in this area. In addition to the benefits to be derived by the prevention of flood damages, benefits will also be provided through elimination of disruption of manufacturing and railroad operations. The average annual benefits from the project are estimated to be $888,000.

Average annual charges: The total average annual charges are estimated at $526,200.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Levee embankment and drainage facilities (items III E and IV A)	$443,500
(*b*) Pumping plant (item III C)	385,900
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955: (*a*) Pumping plant (item IV C)	266,300

Mr. HAND. The next project is the Wood River Drainage and Levee District, Illinois. The total estimated Federal cost is $13,028,000; total appropriations to date, $7,745,000; the amount requested for fiscal 1955 is $345,000, bringing the project to 62 percent completion. The balance estimated to complete thereafter is $4,938,000.

Tell us, generally, what you expect to do with the $345,000 now requested.

Colonel STARBIRD. On this project we are now working on raising the existing level of the levees at the south end of the front line protecting the Wood River Levee District. We will employ $141,200 to continue that levee work.

We will initiate seepage work on a section of the levee already brought to grade at a cost of $88,400; we will accomplish certain work on closure structures at a cost of $6,700; and continue work on the pumping plant and drains at a cost of $108,700. The total in this case is $345,000, the amount requested, because there is estimated to be no unobligated and unliquidated balance.

Mr. RABAUT. How many places do you intend to approach this particular project with these funds—just five places?

Colonel STARBIRD. There are really four major features of work as follows: There is the levee on the south end to be continued; work on two pumping plants; the seepage-control work; and work on a closure structure.

PERRY COUNTY DRAINAGE AND LEVEE DISTRICT, MISSOURI

Date	Unobligated balance	Unexpended balance
June 30, 1953	$510,745	$828,232
December 31, 1953	270,879	368,247
June 30, 1954 (estimate)	None	115,000

STATEMENT OF AVERAGE ANNUAL BENEFITS

The project is located in Perry County, Mo. and Randolph County, Ill., on the right bank of the Mississippi River and will protect 26,050 acres of agricultural lands against floods. The project benefits, derived entirely from protecting this large agricultural area from floods, are estimated to be about $400,100 annually.

Average annual charges: The average annual charges are estimated at $289,600.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force: (*a*) Levee embankment (items VI–B and VI–C), drainage facilities (item VI–B)	$481,300
Proposed in fiscal year 1954 but not yet in force: (*b*) Seepage control (item VII–A (1))	153,400
Proposed in fiscal year 1955	None

Mr. HAND. The next project is crossing the river to the Perry County Drainage and Levee Districts, Nos. 1, 2, and 3, in Missouri.

The total estimated Federal cost is $8,140,000; total appropriations to date, $3,745,400, and the amount requested for fiscal 1955 is $265,000, bringing the project to 49 percent completion. The balance necessary to complete the project is $4,129,600.

Will you tell us the allocation of the funds within the requested appropriation of $265,000?

Colonel STARBIRD. Yes, sir. With that amount and the carryover, we are going to continue embankment work on the back levee at a cost of $239,900; continue work on the seepage measures for the front-line of protection at a cost of $137,700, and continue the work on drainage facilities connected with the embankment at a cost of $2,400.

Mr. HAND. That completes the projects on the upper Mississippi in Illinois and Missouri.

VINCENNES, IND.

Date	Unobligated balance	Unexpended balance
June 30, 1953	−$432,530	$209,479
Dec. 31, 1953	499,856	1,023,644
June 30, 1954 (estimated)	192,000	664,200

STATEMENT OF AVERAGE ANNUAL BENEFITS

The project is located on the Wabash River in Knox County, Ind., and will provide flood protection for the city of Vincennes, Ind., an urban area of about 1,900 acres. The population or this city according to the 1950 census was 18,798 of which about 17,800 reside within the area to be protected. About 4,400 residences, 380 business concerns, and 16 manufacturing plants are located in this area. Value of these properties was estimated at $79,560,000 in an economic survey made in 1951. Although not calculated in benefits received from this project, approximately 50,000 acres of agricultural land in the Brevoort District will receive protection in part from inundation by floods. The average annual benefits through flood prevention are estimated at $965,000.

Average annual charges: Average annual charges are estimated to be $200,200.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force: (*a*) Levee embankment, floodwall, drainage facilities (section A, part 2)	$568,600
Proposed in fiscal year 1954 but not yet in force: (*a*) Levee embankment, floodwall, drainage facilities (section B, part 1)	430,600
Proposed in fiscal year 1955: (*a*) Levee embankment, drainage facilities (section B, part 2)	874,400

Mr. CEDERBERG. The next project is a local protection project, Vincennes, Ind., where we have a total estimated Federal cost of $4,266,000; appropriations to date, $2,088,000; the request before us at this time is $600,000, and the balance required to complete after this year, or fiscal year 1955, is $1,578,000.

Will you give us an idea as to what you anticipate spending the $600,000 for in this coming fiscal year, if appropriated.

Colonel STARBIRD. Yes, sir. With the requested appropriation and the amount carried over, we will use $708,700 on railroad relocations, with the major portion of that or about $670,000 on the Baltimore and Ohio main crossing, and the balance on supplemental railroad crossings. The Baltimore and Ohio contract has already been awarded. We will continue and complete a section of the levee in the area just below the V of Vincennes as it appears on the map, and we will start another section of levee there, all of which is estimated to cost $225,000. We will continue and complete also a section of the floodwall in the same general area at a cost of $95,200. We will continue and complete, of course, the drainage structures that go with those sections I have just mentioned of levee and wall at a cost of $234,200, and complete certain gages that are needed at a cost of $1,100.

Mr. CEDERBERG. I note the benefit to cost ratio is 4.18 to 1, which is a rather good ratio. Will you advise the committee as to just what area this project protects and some of the history of the damages in that area?

Colonel STARBIRD. Yes, sir. It is an area that receives relatively frequent floods, some of which are quite heavy. Since 1948, for example, we have had eight floods; major floods in 1943 and 1950 where it was necessary to do considerable emergency type work.

Local interest worked with the National Guard to save the city in both of these floods.

As I mentioned, we have had altogether, within the last 5 years, 8 floods, some minor and some major, that would have caused some damage in the area had the project not been partially complete.

Mr. CEDERBERG. Has there been any damage since 1940 from floods?

Colonel STARBIRD. I think not, but I will supply that for the record.

(The matter referred to follows:)

The existing protection at Vincennes was constructed by local interests from 1930 to 1940, and although no damage has been incurred since 1940 as a result of flooding, it has been necessary because of the bad state of deterioration of existing works to resort to costly flood fighting operations during major flood periods to prevent their failure.

The value of property subject to damage in the city is estimated at about $79,560,000.

Mr. CEDERBERG. Have the local interests been fulfilling their obligations in this particular area, or is there anything you should call to our attention regarding that?

Colonel STARBIRD. No, sir; there is nothing I think that needs to be called to your attention on it. They are fulfilling their obligations.

Mr. CEDERBERG. Can you give us the status and the reason for the $92,300 you have in a budgetary reserve on this project?

General CHORPENING. As you will recall, early in the hearings we stated that an appraisal was made of all of our projects last fall in connection with the desire to maintain expenditures to the minimum. We were asked to report on those where we could see that, during the fiscal year, we would not actually expend the full amount of funds available. At that time, from our knowledge of the construction progress here, we determined that this sum of $91,000 would not be expended and, therefore, the Budget did not apportion that money to us.

I want to make clear, however, that in all instances where such funds were not apportioned to us on projects, we were advised that should we require any of the funds during the fiscal year, we could apply and, if we had a good case, we could get the apportionment from the Bureau of the Budget. Furthermore, in considering the amounts required for fiscal 1955, in each instance the funds that are not apportioned in the budget are considered to be available for expenditure in fiscal 1955.

Mr. CEDERBERG. In other words, if we should give the requested appropriation in the amount of $600,000, actually you would have available $692,300, providing you can get clearance from the Bureau of the Budget for the difference; is that right?

General CHORPENING. The Bureau of the Budget is very clearly taking that into consideration, and expects to apportion those funds.

UNOBLIGATED BALANCE

Mr. CEDERBERG. Would you, briefly, advise us as to the status of the works in place, and the reason for the present unobligated balance on this project?

Colonel STARBIRD. Yes, sir.

As far as the works in place are concerned, the northeast section has been completed, work is under way on the center section, and

the southwest and the back sections are yet to be done. A contract has been let with the railroad. I believe you can appreciate that when we were considering where we could make impoundments, that we had a period when we did not dare drive projects particularly hard.

As I remember, the period involved was about 6 weeks, and in this particular case, knowing we might slow up and get some impoundment, we allowed the railroad to start its work a little later because they thought they would like to complete a little more planning, and also that they could complete the overall project at about the same time as originally scheduled.

Also, we did delay an earth contract for around 2 months.

Mr. CEDERBERG. Is that related to your unobligated balance?

Colonel STARBIRD. That is right, sir, these were related to the unobligated balance.

Mr. CEDERBERG. Most of your unobligated balance is now obligated, or will soon be obligated?

Colonel STARBIRD. Well, sir, of the money that we had at the beginning of the year, we have $500,000 in round numbers now unobligated.

The expectation is that by the end of the year that unobligated balance will be reduced to just under $200,000.

Mr. CEDERBERG. But you feel even in view of these unobligated balances and especially the large unexpended balances that you are justified in requesting this additional appropriation?

Colonel STARBIRD. Definitely.

Mr. CEDERBERG. You feel you will be able by the end of the coming fiscal year, 1955, to substantially reduce these amounts?

Colonel STARBIRD. That is correct. We have considered, of course, the changed situation in drawing up this budget estimate.

In other words, the consideration of possible impoundment has resulted in a situation involving considerable carryover, but we took full cognizance of this in preparation of our budget estimates.

Mr. DAVIS. You have increased the estimated cost of this project to some extent since last year. Will you explain that increase?

Colonel STARBIRD. We have, sir. We have increased it based on a price-level increase, $48,300. We have also increased it by the addition of two railroad raisings and one highway raise in the north area of the project outside of the protected area.

In this particular case, the reason we raised the railroad is basically this: The railroad can operate in a small amount of water. On the other hand, we cannot leave the closure structure open while the railroads so operate. We are going to raise the railroad by about 2 feet, so that the railroad can be operated to the benefit of the city, and at the same time the closure can be effected.

The railroad has said that if that is done they can keep operating north of there.

This highway relocation is connected with the railroad relocation, and as I mentioned, it is outside of the area protected. It involves a sum, as I remember, of about $69,000. Because the highway crosses the railroad, it is necessary to pull the highway up so that it can make that crossing. It is not to the benefit of the people concerned; it is necessary because we are raising the railroad.

CORALVILLE RESERVOIR, IOWA

Date	Unobligated balance	Unexpended balance
June 30, 1953	$422,849	$616,842
Dec. 31, 1953	426,232	565,788
June 30, 1954 (estimate)	376,500	588,500

STATEMENT OF AVERAGE ANNUAL BENEFITS

The project will provide substantial reduction of average annual flood damage for 31,000 acres of land along the Iowa River below the dam. The area protected includes commercial facilities at Iowa City, railroad and highway crossings, the business district at Coralville, Iowa, and some buildings and grounds at the University of Iowa. Important benefits along the Mississippi River will accrue to 326,000 acres of agricultural land, industrial facilities at several cities and to many railroads and highways which cross or parallel the river. Average annual benefits are estimated at $1,781,000.

Average annual charges: The average annual charges are estimated to be $726,400.

Data on continuing contracts

	Total estimated contract earnings
Continuing contracts in force	None
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955:	
(*a*) Relocations, U. S. Highway 218, C. R. and I. C. Ry	$2,015,900
(*b*) Relocation, roads, route Y	127,500
(*c*) Relocation, roads, routes R and Y	317,300
(*d*) Relocation, railroads, C. R. I. and P. R. R	198,400
(*e*) Relocation, Lake MacBride Park utilities and remedial works	151,000
(*f*) Relocation, Lake MacBride Dam	421,400
(*g*) Dam, stage 111 of nonoverflow section, outlet works; channels excavation for river diversion, operators' quarters, grading and landscaping and utilities	3,426,600

Mr. HAND. The next project is the Coralville Reservoir, in Iowa, and the total estimated cost is $18,268,000, and total appropriations to date are $6,010,100.

The amount requested in fiscal year 1955 is $2.3 million, which will bring the project, financially, to 45 percent completion, although I understand, physically, it is about 33 percent complete.

The amount necessary to complete that is $9,957,900.

Colonel, will you justify the request for $2.3 million, subject to detailed questions thereafter?

Colonel STARBIRD. Yes, sir.

This is a project that was started in 1949, and it was interrupted in 1951. We do have a substantial amount of work already accomplished and a substantial amount of land acquired.

I say "a substantial amount," but it is nowhere near complete, in either case. However, we do believe that the work is far enough along so that if this sum is appropriated we could close the structure beginning in April of 1955.

We, therefore, are recommending that $2.3 million be appropriated. This amount plus funds in budgetary reserve would be used as follows: $1,387,700 would be used to continue land acquisition so that we can have a fairly clear reservoir pool at the time that the pool starts to build up; $770,000 is to undertake relocations; $20,000 is for pool

preparation; $159,000 would be used to initiate Stage III of the dam contract, which would continue the embankment and the spillway.

I might mention, also, that a part of the outlet structure has been completed—a major portion. We would continue work on the approach and outlet channels in the amount of $170,900, and continue certain miscellaneous work, including planning in the amount of $30,000.

Mr. HAND. To what extent, colonel, is this project useful in its present status, if any?

Colonel STARBIRD. It has no use in its present status, sir. Of course, there are slight maintenance charges due on it but they are not great. We have $6 million in the project, and the $6 million is lying fallow. The project, with normal high water, has caused no damage above, but there is conceivably a situation where that embankment might cause some extra flooding above.

Mr. HAND. You mean by reason of what you have done in its present state it could cause additional damage?

Colonel STARBIRD. Yes, sir; it could cause a partial blocking of the river.

The district reported some time ago that the raise would be in the neighborhood of one-half foot during a 10-year frequency flood.

ACREAGE ACQUIRED

Mr. HAND. What acreage have you already acquired for this project?

General CHORPENING. Fifteen thousand four hundred and thirty-four acres have been acquired.

Mr. HAND. How many more acres do you contemplate acquiring?

Colonel STARBIRD. Incidentally, when you say "How many are we still contemplating acquiring?" this is one of the reservoirs which we have under study to see whether we will take complete acquisition or to see how the new land policy applies, and what savings could be effected.

Mr. HAND. I was going to ask you that question. Do your estimates now reflect the new land policy which was discussed with us by General Sturgis at the opening of these hearings?

Colonel STARBIRD. They do not yet reflect it. However, as you will notice, this does not bring land acquisition to 100 percent completion on the current estimate. It brings it, as I remember, somewhere near 75 percent completion.

Mr. HAND. Let us get down to the point of how much land we have now, and how much land, presently, at least, you intend to acquire in addition to what we already own.

Colonel STARBIRD. The total acreage to be acquired is 34,089 acres. When I say "acquired," that is acquired in some form, either through easements or otherwise.

Mr. HAND. That would include flowage rights, or easements of some type, or a fee-simple title?

Colonel STARBIRD. That is right.

Mr. HAND. Is there any way to split up this present estimate?

Colonel STARBIRD. No, sir; we have it under study, but this is one project that we had a request on, incidentally, to make substantial expenditures to restudy everything in the way of the application of the land policy.

We did not feel that complete restudy was warranted in view of the fact that funds were not appropriated for this project last year. We have undertaken, therefore, only office work in the restudy so far.

Mr. HAND. Will you refer again to the amount involved in this request for $2,300,000 for land acquisition in some form or other during this fiscal year? It is a considerable amount, as I recall, and I want you to tell me again what those figures are.

Colonel STARBIRD. Yes, sir.

They are $1,387,700, which would leave us with $1,749,200 yet to go.

In other words, it would be slightly under 50 percent of the total of the lands yet to go, which in round numbers are 19,000 acres, and if the fee title can be acquired, slightly more reasonably, then we could acquire additional lands.

Mr. HAND. Do you feel we are justified in considering an appropriation of over $500,000—the entire amount requested for this year 1955, for land acquisition when you have testified that your plans for further land acquisition are uncertain as between fees and flowage rights, and easements, which are still subject to the possible application of the new land policy which, in general, is not firm?

General CHORPENING. We do not know as yet what might be the difference between acquiring flowage easements—comprehensive flowage easements—and fee title, as we previously had contemplated. Of course, we do feel that there will be some savings, but I do not have any idea what those savings might be at this particular instance.

Until we are able in the field to start applying the policy and determining what a farmer or landowner thinks his land is worth for a flowage easement as against the fee simple process, we are in no position to do anything but conjecture.

We do think it will be something less, but to give you any figure less, I could not do that.

I am sure you appreciate the fact that we only established this policy a few months ago.

Mr. HAND. But it is true, and without being in the least critical of these figures, that this estimate for additional land acquisition is at the present time a conjectural figure, and it is not a firm estimate?

Colonel STARBIRD. This was based on fee simple acquisition; that is correct, sir.

Mr. HAND. It does not presently reflect, at least, the new land policy?

Colonel STARBIRD. That is correct.

Mr. HAND. What is the estimate of the overall cost of the land for this whole project?

Colonel STARBIRD. The overall cost of land is estimated at $5,960,000.

Mr. HAND. That, of course, is extremely high, and approximately one-third of the cost of the entire project.

What is the character of the land surrounding this construction?

Colonel STARBIRD. I can give you a breakdown of that, sir. Seventeen thousand acres, sir, roughly are cropland; 4,000 acres are in pasture, and 12,000 acres are woodland, and a little less than 800 acres are a part of the State park area.

Mr. HAND. Is the woodland scrub, or good woodland?

General CHORPENING. The average cost here would indicate it is about $70 an acre.

Mr. HAND. That is overall, and it does not mean too much to us. What is the average cost of the agricultural land per acre?

General CHORPENING. About $275 an acre, I believe.

Colonel STARBIRD. That, of course, includes the improvements thereon.

Mr. HAND. In other words, in this area we are stuck with a very large amount of land which, apparently, has considerable value. I mean that agricultural land in Iowa is good land, and there is a lot of woodland. I do not know anything about it, but it certainly has some value. You have some meadowland which is good land. Since the land cost is relatively high in comparison with the project, I wonder if you would insert in the record an analysis of the land costs, and divide it up between the different characters of land, and tell us how much improvements you have on the land, and again refresh our memory on the amount acquired and the amount to be acquired.

General CHORPENING. You want the estimated cost of the value of the improvements?

Mr. HAND. Yes. We really have more land to acquire yet than we have acquired so far; have we not?

General CHORPENING. Yes, sir.

Mr. HAND. The total amount is about 34,000 acres; is that right?

General CHORPENING. That is right.

(The information requested is as follows:)

The total land to be acquired for the Coralville Reservoir project is 34,089 of which fee title has been acquired to some 15,434 acres, including 715 buildings, and flowage easements over 798 acres of land. The balance remaining to be acquired totals 17,857. The value of the total land to be acquired together with the value of the improvements thereon is indicated by the following table:

Type of land	Acreage	Present approved estimate			Total
		Land	Improvements	Other	
Rural:					
Cropland	17,165	$3,842,000	$663,000		$4,505,000
Pasture	4,000	394,000	69,000		463,000
Woodland	12,147	752,000	129,000		881,000
State park	777	0			[1] 0
Severance damages				$111,000	111,000
Total	34,089	4,988,000	861,000	111,000	5,960,000

[1] Based upon flowage easement and remedial works in lieu of land payments.

SUSPENSION OF PROJECT IN 1951

Mr. HAND. What was the reason for the suspension of this project in 1951, Colonel?

Colonel STARBIRD. This was a suspension as a result of the presidential directive, upon the outbreak of the Korean war, to reexamine all projects and to bring forward those that had a national defense impact.

Mr. HAND. Presumably, the President did not think that this would have any national defense impact?

General CHORPENING. Not sufficiently to continue its construction during the Korean emergency.

Mr. HAND. Can you advise us whether there has been any official change either in the formula applied by the President or the formula affirmed by the Appropriations Committee with respect to the Korean emergency?

General CHORPENING. As to that, at the time the Bureau of the Budget was considering this budget now before you, consideration was given to resumptions and to new starts. Criteria were worked out by the Bureau of the Budget for the inclusion of some new starts and resumptions in view of the present situation wherein the Korean hostilities have stopped, and the present economic situation of the Nation.

Mr. HAND. We are no longer faced with that criteria?

General CHORPENING. No, sir, not the original criteria with regard to national defense.

Mr. HAND. What is the particular reason for the resumption of this project at this time?

Colonel STARBIRD. As I mentioned, sir, we have a situation where we have made a substantial investment and, furthermore, it is a good project. It has a high benefit-cost ratio. It will give protection to about 31,000 acres on the Iowa River, and farther down on the Mississippi it will give substantial degrees of protection.

To give you an example of the type of thing that it will do, sir, we will take the city of Quincy, Ill., which as I remember is approximately 100 miles down the river from the confluence of the Iowa and the Mississippi; the flood damage there in 1948 to Quincy would have been reduced about $346,000; in the flood of 1947 it would have been reduced by $1,571,000, and in the flood of 1944, it would have been reduced by $883,000.

In other words, there is a substantial, though, of course, diminishing return from that reservoir all along the acres of the Mississippi River.

It is estimated that there will be around 326,000 acres of land involved in the Mississippi River flood plain below the mouth of the Iowa River.

Also, last year General Chorpening testified at some length on the fact that there were several major railroad and highway crossings that were affected—vital crossings—which would be benefited downstream.

The city of Iowa City is just downstream, as is the town of Coralville.

Mr. HAND. Does this project have any relationship to any other flood-control project?

Colonel STARBIRD. Yes, sir; this is a part of the comprehensive plan for upper Mississippi River.

Mr. HAND. This, primarily, is to lessen the flow of the Mississippi and some conditions downriver; is that right?

Colonel STARBIRD. That is correct. It is one of the many reservoirs to better the conditions in that area.

Mr. HAND. What is the status of your funds and your budgetary reserve?

Colonel STARBIRD. On Coralville, there are $376,500 in budgetary reserve. We carried over, unexpended, into this year, counting that reserve, $616,000. We have carried on little work in this area, except maintenance work and acquisition of the cases that were already in court, and we expect to end the year with an unexpended balance of $588,500, which includes the budgetary reserve.

Mr. HAND. Do you expect to end the year with that amount, sir?

Colonel STARBIRD. Yes; fiscal year 1954. In other words, our expenditures during 1954 will be slight, and this carryover was included in the figures when I gave you the breakout of expenditures for fiscal year 1955.

Mr. HAND. Do I understand, then, that in addition to the new money which you are requesting in the amount of $2.3 million, you will have available approximately one-half million more than that?

Colonel STARBIRD. That is correct, sir, according to the breakout of figures which I gave you.

Mr. HAND. Which reflects $2.8 million?

Colonel STARBIRD. Yes, sir.

RELOCATIONS WITH HIGHWAYS OR RAILROADS

Mr. HAND. Are you experiencing any difficulty with relocations in this area, with highways or railroads, or otherwise?

Colonel STARBIRD. No, sir; I recently rechecked that, and we have no difficulty there.

Mr. HAND. There are no negotiations in that respect, and that phase of it is in good shape?

Colonel STARBIRD. There has been no change in that situation from the information given by General Chorpening to the committee last year, and generally we have not done anything further on relocations.

Mr. HAND. I take it you have, then, no unusual problems with respect to relocations?

Colonel STARBIRD. I know of no unusual problems.

Mr. HAND. I want to pursue in just a little more detail precisely what is the status with the negotiations with the railroads on these problems of relocation, whether you have got firm agreements with the railroads, or are you just satisfied with the talks that you have had so far? In other words, to what extent do you have firm agreements about the relocations of the railroads.

General CHORPENING. That is in connection with Coralville Reservoir.

Mr. HAND. Still in connection with Coralville, yes.

Colonel STARBIRD. With respect to the Chicago, Rock Island & Pacific, we have not had any change since last year. We have not gone ahead with further negotiations. We have a tentative agreement based on preliminary plans, which have been presented by the railroads, and which should result in a firm agreement within a short time.

On the second contract that would be carried through with the requested funds for 1955, with the Cedar Rapids & Iowa City Railroad, the railroad has approved the district's preliminary plans as the basis for a relocation agreement. There again we have gone no further.

Mr. HAND. Those are the only two currently involved?

Colonel STARBIRD. That is correct; those are the only ones in the 1955 budget request.

Mr. HAND. It is fair to say that you are satisfied with the tentative and preliminary negotiations you have made thus far, but in neither case do you have a definite, firm agreement with the railroad, with which you expect these relocations?

Colonel STARBIRD. That is correct.

Mr. DAVIS. I note there is an increase in the total cost here, and I understood you to say, you are not taking into consideration the differences that might result in the acquiring of the flowage easements, as well as the fee taking in connection with the land. Was that correct?

Colonel STARBIRD. That is my understanding.

Mr. DAVIS. I have before me the planning report and on page 7 it is indicated these changes in plans affected result in an increase in the estimated cost of the land of about $1,920,000. However, a reduction of $1,072,000 of that amount resulted from a recent decision to acquire flowage easements in lieu of fee taking on a portion of the land.

General CHORPENING. I think our statements must be corrected. I did not realize that had been taken into consideration.

Mr. DAVIS. Now, does that decision to acquire flowing easements—that decision was made in accordance with the policy adopted within the last few months?

General CHORPENING. I am not sure. I had not realized that we had taken that into consideration on this project.

Colonel STARBIRD. That was a decision made earlier than the past year.

Mr. DAVIS. That policy had been made with respect to this particular project prior to the computation of the cost figures, which were presented to the committee last year, was it?

Colonel STARBIRD. That is correct.

Mr. DAVIS. So that we have involved in the increased estimate of cost from last year to this year, some rather minor price-level changes, and then you have an item of something under $200,000 for reservoir management and operation; and that refers to some radio reporting network. Can you tell us about that?

Colonel STARBIRD. Yes, actually there are two categories of cost increase reported there.

The major one is the radio network, of slightly over $100,000; that is the establishment, of a series of automatic gaging transmission stations upstream, to give us data for the proper operation of the reservoir. Such a system avoids, of course, having to have permanent gage readers at these locations.

The other part involves recreational areas and access roads, not any extensive development over the area, but in putting in a project we put in the minimum facilities needed for proper accommodation of the public. As I remember we are putting in four sites that are required.

Mr. DAVIS. The budget-cost ratio given us was 1.74 last year, I notice differs from the one here, of 2.45. What occasioned that?

Colonel STARBIRD. We do not know whether that 2.45 is correct or not. As I mentioned earlier, we have changed the system of computation. I have been in contact with the division engineer's office. They have not found any error as yet. However, I believe they have made an error in either the computation or the use of the formula. They report they are certain the benefit-cost ratio is something over 2 to 1.

Mr. DAVIS. A project that has been mentioned as long as this one, and still continues to have some uncertainty about it, naturally

causes a little bit of disturbance, and it would be very, very disturbing if it were not for the very apparent satisfactory benefit-cost ratio on this one.

Mr. RILEY. When do you propose to complete the project; what is your present schedule?

Colonel STARBIRD. It would be completed in fiscal year 1955—in December of 1956.

WICHITA AND VALLEY CENTER, KANS.

Date	Unobligated balance	Unexpended balance
June 30, 1953	−$34,776	$1,615,445
Dec. 31, 1953	741,203	1,230,306
June 30, 1954 (estimate)	318,000	318,000

STATEMENT OF AVERAGE ANNUAL BENEFITS

About 47,000 acres of highly developed urban and rural lands on Chisholm Creek, Little Arkansas River, Arkansas River, Big Slough and Cowskin Creek will be benefited by this project. Flooding of industrial plants and disruption of transportation facilities will also be prevented upon completion of this project. A total of 42,000 persons reside in the protected area. The value of all physical properties in the area is estimated to total about $250 million. Flood protection benefits are currently estimated to average $963,000 annually.

Average annual charges: Average annual charges are estimated at $815,000.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Railroad relocation, embankment and bridge, Midland Valley RR	$235,100
(*b*) Railroad relocation, Bridge, Chicago, Rock Island & Pacific RR	672,800
(*c*) Railroad relocation, Atchison, Topeka & Santa Fe RR	1,177,000
(*d*) Channel, drainage facilities and diversion structure, Big Slough-Cowskin Floodway (parcel B, phase I)	1,689,600
Proposed in fiscal year 1954 but not yet in force:	
(*a*) Railroad relocation, Missouri Pacific RR., Wichita-Hardtner Branch	583,300
(*b*) Railroad relocation, Missouri Pacific RR., relocation agreement	150,000
(*c*) Railroad relocation, Missouri Pacific RR., Wichita-Geneseo Branch	458,400
Proposed in fiscal year 1955:	
(*a*) Channel, Big Slough-Cowskin Floodway (parcel B, phase II)	717,800

Mr. RABAUT. The next item is the Wichita and Valley Center, Kans., project. This is a project with a total estimated Federal cost of $14,139,000. The total appropriations to date are $5,753,000, and the appropriation requested for the fiscal year 1955 is $2,250,000, which will bring it to 57 percent of completion.

The balance required after the fiscal year 1955 is $6,136,000. Will you justify to the committee the request for this fiscal 1955 sum of $2,250,000?

Colonel STARBIRD. If you will take a glance at the map, you can see that we are working on the lower and toward the upper end of the main diversion channel.

Generally our situation is this: The main floodway, at the present moment, has been about 49 percent completed. The Arkansas

training levees, upstream, have been completed to approximately 40 percent, and the relocations have reached approximately 33 percent completion.

The amounts required will be as follows:

To continue and complete the Atchison, Topeka & Santa Fe Railroad crossings, and there are 2 of them, both depicted in red, $1,971,600. We of course should complete them simultaneously, or immediately after the completion of the channel.

We intend to continue the floodway by undertaking the work shown in red, at a cost of $542,800; to continue the levee and wall planning to the extent of $12,400, and to complete the Big Slough Diversion structure, $41,200. The appropriation request plus the carryover would be used for expenditure in the amounts reported.

Mr. RABAUT. This project affords protection to the industrial, residential, and transportation area. I notice that there are quite a number of good-sized industries set forth here in the justification, together with machine shops, foundries, cement plants, and so forth, which in turn affect very many more plants that are put out of business during floods.

Colonel STARBIRD. That is correct. It is also a railroad center, as you know, and a major portion of the railroad facilities are in the city of Wichita.

Mr. RABAUT. The greater portion of this money will go to the part which is called Cowskin Floodway?

Colonel STARBIRD. Yes. That is the main floodway. It is the Big Slough-Cowskin Floodway. The major portion of the 1955 request, of course, will go toward the completion of the relocations necessary for the completion of the floodway.

RAILROAD RELOCATION

Mr. DAVIS. The important part of the overall cost of this project has to do with this railroad relocation problem. I wish you would bring us up to date with some details as to the progress you have made in getting those arrangements completed.

Colonel STARBIRD. Yes. The railroads concerned are the Midland Valley; the Chicago, Rock Island & Pacific; the Missouri Pacific; the Atchison, Topeka & Santa Fe; and the St. Louis-San Francisco Railway.

Negotiations have been completed and the construction is either completed or underway on the bridges downstream.

Negotiations are essentially complete for all relocation work scheduled for fiscal years 1954 and 1955 which involve the Midland Valley Railroad, the Chicago, Rock Island & Pacific Railroad, the Missouri Pacific Railroad with two bridges, and the Achison, Topeka & Santa Fe Railway with regard to the bridge over the Big Slough-Cowskin Floodway. Of these, the only contract not yet awarded is with the Missouri Pacific Railroad and the proposed contract is now being reviewed by the railroad. The construction is scheduled to be initiated in 1954 with the award of the contract in March or April. There are relocations at other crossings scheduled for fiscal year 1956 and we intend to negotiate in the year 1955 for them.

Mr. DAVIS. This is the railroad line for the four?

Colonel STARBIRD. No, sir. These are separate lines for the four railroads concerned.

Mr. DAVIS. The overall total cost has remained constant, but there has been some shift in your cost estimates during the past year. Is that correct?

Colonel STARBIRD. That is correct.

Mr. DAVIS. Briefly, what are those changes?

Colonel STARBIRD. I do not have the detail of the changes involved. We have had no change in the physical features, and so the changes have been in the individual amounts.

General CHORPENING. The construction costs actually were increased somewhat, and the relocation costs decreased, in the same amount. No net change in the estimated cost of the project.

Mr. HAND. This is largely a local project, is it not?

Colonel STARBIRD. It is a project that is local in the sense that it is a diversion around the city of Wichita and Valley Center, and the adjacent land. It does not have any effect downstream or upstream.

Mr. HAND. I observed the agricultural products on the adjacent land is only valued at $1,800,000 annually. So I take it this is largely a protection for the industrial town of Wichita.

Colonel STARBIRD. Yes, sir.

Mr. HAND. Does it have any relationship to any other project for flood control in that area?

Colonel STARBIRD. No; there are no other relationships. I cannot give you the breakdown of the annual flood damage. I am relatively certain that you are right, that the major portion of the flood damage is for damage in the industrial area.

General CHORPENING. That is correct. I know this project very, very well.

LOCAL PARTICIPATION

Mr. HAND. What is the status of the local contribution or participation in this project?

Colonel STARBIRD. Local participation, which is called for, is extremely heavy. The estimated cost to them is something over $6.5 million. The terms of that contribution are the normal four assurances for assistance, not cash contributions. We do have the cooperation of the city, and we have not had difficulty.

Mr. HAND. On the work that has been completed so far, what use does it have itself, or does it require further work?

Colonel STARBIRD. It does have some use of itself, in that the lower end the work has been substantially completed, and that it does allow the water to pass more rapidly from the upper end; and also some work has been completed on the Arkansas training levee.

Mr. CANNON. Does this dam serve any purpose other than flood control?

General CHORPENING. No; no other purpose.

Mr. CANNON. What is the rate of fluctuation as between high and low water?

Colonel STARBIRD. The high stages in recent years have been in the neighborhood of 11.5 feet above mean low water. However, we do not have accurate gage records to give us data back beyond 1922.

Mr. CANNON. When, at the 11.5-foot stage, what is the damage inflicted below?

Colonel STARBIRD. If the 11.5 stage recurred now, sir, and the project was assumed to be not effective at all, then the damage would be approximately $5,300,000 from that one flood.

Mr. CANNON. How often does that occur?

Colonel STARBIRD. We had a stage approximating 11.5 feet—of 11.9 on July 1, 1951, we had a stage of 11.7 in 1944, and nothing definite of that stage prior to that time, as far as the record shows. However, we have had other stages during that period of 8.2; 10 feet; 10.3; and 8.7.

Mr. CANNON. Are those two occasions the maximum flood stage on the river?

Colonel STARBIRD. No—probably I am not answering your question right. Our records only go back to 1922 and within this time the river stage has been above 11.5, only twice. I took 11.5 as being near the maximum of recent time.

Mr. CANNON. Is that due to deforestation of the watershed.

Colonel STARBIRD. No, sir; we just do not have the accurate records of stage back beyond 1922.

Mr. CANNON. Have you ever thought of instituting on streams of this character, the same kind of structures they have on the Miami River in Ohio? Five dams were built in the Miami River, Ohio, which do not impound all floodwaters, but restrict the flow to a rate that will not damage the flooded plane in area below.

It has been very successful. Prior to construction of these dams, cities below, including Cincinnati, were inundated practically every year. Since the construction of these dams, the waterflow never ceases, and therefore there is no silting up, but the rate of flow is restricted and never reaches sufficient volume to do damage. The water backs up in the lakes back of the open dams, and in a few days runs down to normal volume.

General CHORPENING. We have thought of that, and where the topography of the particular river will permit, and where we can justify it, we will so recommend.

But the topography here is such that to control the water that comes down, by construction of a dam, would be a much more expensive proposition, if feasible.

I might mention in connection with Cincinnati, we have a very large local flood-protection project there, in addition to whatever help the dam itself you refer to gives.

Mr. CANNON. Well, of course, Cincinnati is subject to floods from the Ohio River.

General CHORPENING. Yes.

Mr. CANNON. This is on one of the smaller tributaries. To your knowledge, has this method of flood control ever been used by the Government? The one in Miami is a private construction project.

General CHORPENING. Not to quite that extent, but in many of our recommended projects, to give flood control, they do include a number of reservoirs to take off the flood and give flood control downstream.

Mr. CANNON. It is an economical form of flood control. There are no gates, no employees, not even a guard. They simply have some earth fills, with concrete openings, which will let the water through. And there can be no silting, because the silt goes through with the water, and it effectively controls the floods. They have had no floods on the Miami River since it was erected 20 or 30 years ago.

General CHORPENING. It works very well there, due to the particular situation that exists in that area, and we do not find very many similar situations where it would work. But we do consider them because we want to determine the best and most economical method of flood control.

Mr. CANNON. What is the character of this dam; what character of construction, the materials with which it is built, its capacity, and its life expectancy?

General CHORPENING. This is a local flood-protection project; this is not a dam. This is purely a local flood-protection project for the city of Wichita.

Mr. CANNON. It is not a reservoir?

General CHORPENING. No; this is essentially a floodway.

Mr. CANNON. This is in the nature of a levee, with accompanying works to expedite the flow of the water past the city?

General CHORPENING. That is correct; it is actually a bypass to the west of the city, so that flood flow will not come over the city.

Mr. CANNON. The purpose of the project is to protect the city, and it is not for the purpose of protecting the flooded area below.

Colonel STARBIRD. Yes.

Mr. CANNON. Does it inflict damage below the city?

General CHORPENING. No.

BARBOURVILLE, KY.

No construction funds available.

STATEMENT OF AVERAGE ANNUAL BENEFITS

Barbourville is a residential, trading, and educational center for the important bituminous coal mining and lumbering industry of southeastern Kentucky. Construction of the project will greatly enhance the economic stability by relieving the community of paralyzing flood damages recurring at frequent intervals. The area to be protected embraces approximately 650 acres of land within the present city limits, involving over 500 dwellings and 30 business establishments, with a total valuation of about $3,000,000. The threat of recurring floods tends to retard development of the community and depresses property values. Pollution from floodwaters presents an ever-present possibility of epidemics. Average annual flood-control benefits are estimated at $134,700.

Average annual charges: Average annual charges are estimated at $104,300.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force	None
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955: (*a*) Floodwall	$84,300

Mr. DAVIS. The next project is Barbourville, Ky., with a total estimated cost of $2,190,000. The Federal appropriation, total to date, including the $30,000 in the current fiscal year, are $55,000 for planning purposes.

We have before us a request for $350,000, to initiate construction on this project, which brings it to 18 percent of completion. Because the funds requested this year are to initiate construction, Colonel, we ask you to give us some history of this project, and bring us up to date on it.

Colonel STARBIRD. As you mention, Mr. Chairman, this is a small project. It has a benefit-cost ratio of 1.29 to 1. The plans are well

along, well enough along, so that we believe we have an accurate estimate.

We have the general design memorandum, approximately 65 percent complete on December 31, and due for completion in February, and to be forwarded to us then for review.

The plans and specifications have been initiated for the first section of the work, the work recommended in 1955. Those plans and specifications for the first section will be completed prior to June 30.

The city of Barbourville has a history of repeated flooding. It is also in an area where the floodings in general are of a nature of rapid or flash floods. It has had 21 floodings in the last 35 years. The last major flood of record was in 1946. That flood innundated almost the entire residential area, and a large portion of the business area. If that flood recurred, based on present prices, there would have been a flood damage in the city in the neighborhood of $1 million.

There was another flood in 1951, and the damages were considerable. The damages in 1951 were $310,000 on the then existing prices, and degree of development.

The project has been highly supported by local interests. They are to continue contributing. They are to undertake the normal four assurances that we have mentioned and described before, and I will not describe them again. The estimated cost of fulfilling those assurances is $282,000, initial cost.

They have voted for the issuance of a bond. They have not yet issued the bond, but have indicated their preparedness to issue them as soon as initial construction funds are appropriated.

The project is basically a simply designed project, of a levee, wall, and pumping plant, similar to many of the others on the Ohio and on the Cumberland and on other Ohio tributary rivers.

Mr. DAVIS. You spoke of the planning being completed by the 30th of June this year. Does that mean that a definite project report will be available prior to that time?

Colonel STARBIRD. We will not have a definite report, project report. We do not use definite project reports on projects such as this. We complete a general design memorandum, and then if there are other items that need further investigation, we complete specific design memorandum. We then complete the special design memorandum of the various elements for construction. The general design memorandum is expected to be completed in February.

Mr. DAVIS. The local cooperation is in good shape?

Colonel STARBIRD. It is in good shape and the city is anxious to go ahead.

Mr. DAVIS. You anticipate completing the project when?

Colonel STARBIRD. We would complete the project in 3 years; in other words, complete it in the fiscal year 1957.

Mr. HAND. Do you have any figures on either the population or the assessed value of the city of Barbourville?

Colonel STARBIRD. The population, as I remember, is in the neighborhood of 3,500 and the total property valuation is given as $3 million in the planning report.

Mr. HAND. Is that based, do you know, on official assessments, or local estimates?

Colonel STARBIRD. I cannot answer that. The normal thing is that we take the best estimate we can get by a reasonable expenditure

of effort. The logical place to go first would be to the assessor's office.

Mr. HAND. Well, is it habitual for you to do that, to go to the assessor's office?

Colonel STARBIRD. It is where I have been.

General CHORPENING. That is the habitual case. We go to the assessor's office and then from our own real-estate knowledge come to a conclusion as to a conservative value of the property.

Mr. HAND. This is a new and entirely local project?

Colonel STARBIRD. It is, sir.

Mr. CANNON. Why has there been such a delay in the construction work, because of the lack of funds?

Colonel STARBIRD. We have received only planning money to date. The funds appropriated were for planning only on this project and this would be our first funds for construction. We would normally complete an element of the planning, of course, before we request funds for construction.

Mr. CANNON. Has this flood situation been of long duration?

Colonel STARBIRD. Yes, sir.

Mr. CANNON. It has been recurring for many years.

Colonel STARBIRD. Yes, sir, it has. As I mentioned, this is in an area where the river comes down out of a generally narrow gorge and gets into a little wider area. The record is that in the last 35 years they have had 21 cases of flood in that city.

COVINGTON, KY.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$318,562	$1,103,918
Dec. 31, 1953	282,241	1,336,457
June 30, 1954 (estimate)	None	266,700

STATEMENT OF AVERAGE ANNUAL BENEFITS

The project upon completion will provide flood protection benefits to an area of about 400 acres comprising low-lying industrial and residential areas of Covington along the left bank of the Ohio River and the left bank of the Licking River at their confluence, 470.5 miles below Pittsburgh, Pa. In general, the area along the Ohio River is utilized primarily for business and industrial purposes while that along Licking River is chiefly residential. In 1950 the city had a population of 64,282 of which about 20,000 people resided in the protected area. Average annual flood-control benefits accruing to the project are estimated at $495,000.

Average annual charges: Average annual charges are estimated at $341,000.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Section C—Levee, floodwall, pumping plants, and drainage facilities	$2,322,300
(*b*) Closure structures and pumping plants—19th, 24th, Kennedy, Pleasant, and Court Sts	700,500
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955	None

Mr. RILEY. The next project to be considered is the flood-control project at Covington, Ky., at an estimated Federal cost of $7,753,300; total appropriations to date, $6,720,200. You are requesting for

fiscal 1955 $900,000, which will bring the project up to 98 percent completion.

I note that some of this seems to be a levee and some seems to be a wall. Is this a combination wall and levee project?

Colonel STARBIRD. It is. It is a combination levee and wall. There is about 2 miles of levee and about nine-tenths of a mile of wall. There are also 10 pumping plants in that area.

Mr. RILEY. Why is that little section of wall left incomplete?

Colonel STARBIRD. Are you referring to a cost of around $131,000?

Mr. RILEY. No. You said there was about nine-tenths of a mile of wall yet to be constructed, as I understand.

Colonel STARBIRD. No, sir. If I did, I am sorry. The project consists of about 2 miles of levee and about nine-tenths of a mile of wall. Work is underway on all of the project and the work remaining is levee work.

Mr. RILEY. The wall has been completed as far as you intend to carry it?

Colonel STARBIRD. That is correct.

Mr. RILEY. What is the history of floods in this area? Is it recurring?

Colonel STARBIRD. This entire area receives very frequent flooding. As I remember, the population of Covington is in the neighborhood of 65,000. The Ohio River would overflow into sections of Covington without the project but with a portion of the project having been completed, a measure of protection is provided. About once every 2 years, the Licking River overflows also, but not necessarily simultaneously with the Ohio River and you get floods there of a frequency of about once every 2 years. The maximum damage from flooding in recent years was in 1937 when Covington suffered damages in the amount of $2,057,000. If we escalated that on the basis of present day costs, the damage would be in the neighborhood of $5 million.

Mr. RILEY. What is your financial situation now; do you have any unexpended funds?

Colonel STARBIRD. We have, sir. We started the year with $1,109,000 in round figures carried over. We have now an unexpended amount of $1,336,457, and an unobligated amount of $282,241. At the end of the year, we expect to have no funds unobligated, and to reduce the unexpended to approximately $266,700.

Mr. RILEY. Do you carry a pretty heavy contingency amount in that? Is there a possibility you would have a remainder in your contingency account?

Colonel STARBIRD. Yes, sir. This is a project going into its last year of construction. We would naturally reduce the contingency as we approach the end of a project and any contingency no longer needed is applied against the funds to be available, or applied to reduce the estimated cost.

You probably will note here that the estimated cost of the project has been reduced from $8,400,000 this year to $7,753,300. I don't mean to imply that the reduction is entirely a reduction in the contingency item. We have been reducing the contingency all the way along. The reduction is largely due to very good success in bids on this project.

Mr. RILEY. And you think this amount of $900,000 and the balance to complete after 1955 of $133,100 will be ample to complete the work.

Colonel STARBIRD. We feel it will be ample.

LOCAL PARTICIPATION

Mr. RILEY. What is the local participation in this project?

Colonel STARBIRD. The local participation includes the provisions of lands, easements, relocations, rights-of-way, maintenance and operation, and a guaranty of the Federal Government against claims. The estimated cost to local interests in these various activities is $765,000.

Mr. RILEY. Are they meeting their obligations?

Colonel STARBIRD. Yes, sir; they are meeting their obligations.

We have had a difference of opinion on ponding areas for two stations, the 19th Street Station and the 24th Street Station. The matter was brought up in the supplemental appropriation hearings last year (no funds were approved) for the conversion of those ponding areas at additional Federal expense for pumps. As a result, we have gone ahead with the size pumps we originally contemplated. The ponding areas are basically areas that have been used for ponding in the past. The pumps and those ponding areas will function to remove all of the water.

I understand that an agreeable arrangement has been worked out already with respect to the 24th Street Station. With respect to the 19th Street Station, I do not know whether a final agreement has been reached, or not. The desire of the local interests was that we put in adequate pumping stations there substantially to eliminate the ponding areas that we had notified the city over a long period of time that we would put in.

In fairness to the city, they have had several changes of administration and they said they did not realize they had a commitment, even though they had given assurance, to provide all of the lands, relocations, and rights-of-way.

Mr. RILEY. Do you not think they ought to be notified that they should live up to those commitments?

Colonel STARBIRD. We have so notified them. Immediately after the hearing last year, we notified them we were going ahead with the pumping plants and use of the ponding areas as had been originally contemplated.

General CHORPENING. And these estimates are based on going ahead with the construction of the ponding areas as we originally planned them, and not on any basis of increasing pumping capacity and eliminating ponding areas.

Mr. RILEY. You protect the Government against any damage that this city might conceive they will have in later years?

General CHORPENING. Yes, sir; the assurance we have from the city protects us.

Mr. RILEY. Is that written or verbal?

General CHORPENING. Written.

Mr. DAVIS. Since last year when the estimate was presented to the committee, there has been a reduction of about $650,000 in the total cost estimate. What does that reflect?

Colonel STARBIRD. There is no change in the basic plan since last year.

Mr. DAVIS. Is that due to favorable bids, then; is that the story?

General CHORPENING. That decrease is due to favorable bids having been received on the pumping plants.

Mr. DAVIS. The failure to request the final $133,100 does not represent any deferral of actual construction at all?

Colonel STARBIRD. It does not.

Mr. DAVIS. It is a contingency that may not be required?

Colonel STARBIRD. That is correct.

Mr. DAVIS. Last year you requested $1,475,000 and the final appropriation was $1,100,000. If we had made the mistake of giving you what you asked for, you would have had more money than was needed to complete the project, would you not?

General CHORPENING. We could not anticipate these favorable bids. We are very happy they occurred.

Mr. HAND. Can we characterize this as wholly or largely a local project, or is this integrated with the general plan of flood control in this area?

Colonel STARBIRD. It is integrated to this extent, that the design, levee height, and wall heights take into consideration the effect of the upper reservoirs in the Ohio River system. This particular project does not give protection to other areas; it benefits from the reservoir construction.

Mr. HAND. Is the construction that has been put in place so far useful in itself?

Colonel STARBIRD. It has some use in itself; in fact substantial use. We have, as you can see from the map, completed the riverfront section and we have also completed about two-thirds of the section—up along the Licking River. The rest is being raised and brought up to grade. In general, the last time I saw it, several months ago, it was being brought up all along the last section. The pumping plants will not be complete until 1955.

Mr. HAND. The unit we are talking about protects nothing, generally speaking, except the city of Covington; is that right?

Colonel STARBIRD. Yes, sir.

Mr. HAND. Has there been a flood history of any consequence since 1937?

Colonel STARBIRD. In 1952 there was one flood that did slight damage but the project was in partial operation at that time. Without the project in operation it would have caused $15,000 in damages. In 1950 there were three floods of $35,000 damage. In 1948, there was a flood of $94,000 damage. In 1945, there was a flood of $239,600 damage.

Mr. HAND. Except for 1945, then, they have all been quite minor in character. Is that a fair statement?

Colonel STARBIRD. They have been much smaller than the 1937 flood. I do not think we would consider, in an area of this size, a $200,000 flood as being small.

Mr. HAND. But we can certainly agree that the $15,000 was small?

Colonel STARBIRD. I agree to that, sir.

MAYSVILLE, KY.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$360,547	$901,581
Dec. 31, 1953	837,776	1,229,518
June 30, 1954 (estimate)	605,000	605,000

STATEMENT OF AVERAGE ANNUAL BENEFITS

The project provides flood-control benefits to an area of about 600 acres in the city of Maysville, Ky. Within this area are located practically the entire business district, the major industries, waterworks, two railroads and all highways leading out of the city. Floods of damaging proportions occur on an average of about once every year and a half. Damage in the amount of $6,310,000 have been incurred during the past 17 years. The protective works will provide average annual flood-control benefits estimated at $368,000.

Average annual charges: The average annual charges are estimated to be $282,700.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Levee embankment, flood wall structure and drainage facilities (Limestone Creek barrier and extension)	$542,700
(*b*) Flood wall structure, gate openings for closure structure, drainage facilities (sec. 3)	1,127,500
Proposed in fiscal year 1954 but not yet in force: (*a*) Levee embankment, floodwall structure, drainage facilities, gate openings for closure structure, gaging station (sec. 4)	2,307,400
Proposed in fiscal year 1955: (*a*) Pumping plants, station structure and installations	564,300

Mr. CEDERBERG. The next project is Maysville, Ky., where the total Federal estimate of cost is $6,656,000; total appropriations to date are $4,319,800, and the appropriation request pending before us at this time for fiscal 1955 is $1 million which, if granted, would bring the project to 80 percent of completion. The balance required after fiscal year 1955 would be $1,336,200.

Would you advise us as to how you intend to spend the requested appropriation of $1 million and also brief us on some of the other fiscal aspects of this project advising us regarding the $605,000 estimated to be unobligated and unexpended at the end of the year?

Colonel STARBIRD. As you have mentioned, there is $605,000 unobligated and unexpended. That will give us a total of $1,600,000 if the requested appropriation is granted. With that money, we will continue to completion the last of the sections of the embankment and shall continue construction on the last of the section of the wall. We shall also continue, but not to completion, the pumping plants, with the objective of completing the project overall by December 1955.

As to the $605,000, that is a part of the budgetary reserve. We requested funds last year to continue the project in an orderly and efficient manner, so as to undertake letting contracts in December for the section on your map appearing as (A) and to undertake letting the contract for (B) with the funds appropriated in 1955.

With the restudy that was made and the investigation which resulted in some lost time, and in view of the possibility of undertaking this as a single contract and still being able to complete it in December 1955, for the 1956 flood season, it was decided to go ahead and let a single

contract instead of as two contracts, awarding the single contract at the beginning of the fiscal year.

After some little study, we decided we probably could do that in view of the size of the contract and still maintain economic progress and, at the same time, get the structures ready for the 1956 flood. Therefore, a decision was made that this was one of the items from which we could put funds into the budgetary reserve.

Mr. CEDERBERG. Is this work you are speaking about here all going to take place in section 4 of this project?

Colonel STARBIRD. The work I am speaking of is all in section 4.

RIGHTS-OF-WAY BY LOCAL INTERESTS

Mr. CEDERBERG. What is the current status of local cooperation in regard to supplying the necessary rights-of-way, and so forth? I understand there is a bond issue that is in process at the present time. Could you advise the committee as to its status?

Colonel STARBIRD. The city is in the process of issuing additional bonds at the present time to take care of the acquisition of rights-of-way for section 4 of the project.

Mr. CEDERBERG. When you say the city is in process of raising bonds, then after the bonds are voted and are approved, they have to go out and acquire this property which, in itself, from the experience we have had in dealings with the Corps of Engineers, is quite a lengthy proposition. In view of that, do you feel you can spend that much money in the coming fiscal year?

Colonel STARBIRD. We feel that we can spend it. In fact, as I mentioned, we intended originally to try to start construction of a section of it so that it would be under construction at the present time.

Mr. CEDERBERG. You have sufficient authority to go into that particular area and start construction right now and it would not interfere at all with the acquiring of the additional property by the city?

Colonel STARBIRD. I would like to give you a more detailed statement on that for the record, if I may.

Mr. CEDERBERG. I wish you would. I think probably we ought to put that burden of leadership in the matter on the local people themselves and, when they vote the bonds and are ready to acquire the property, we can then say, "We are ready to go along with you."

(The matter referred to follows:)

Necessary rights-of-way for initiation of work in section IV will be available by May 1, 1954, when contract award is now scheduled.

Colonel STARBIRD. We have had fine cooperation in this city in getting the rights-of-way.

General CHORPENING. I may mention that we are quite reluctant to push these cities too hard, because if we do and they sell their bonds and there is a delay in receipt of the appropriation, then the other thing happens. They say, "Well, in doing this, you have placed the Government under an obligation to back us and here we are; we have sold our bonds and are not getting anything for it."

Mr. CEDERBERG. I can appreciate it is a matter of very delicate coordination between the Federal Government and the city involved. I think that is true.

General CHORPENING. I have visited this project and the local interests are most cooperative. I am certain all of the rights-of-way acquiring has been worked out with the local interests. There is no question about what we need and they have that information and will proceed as rapidly as possible in getting the necessary funds.

Mr. CEDERBERG. There is no evidence, then, in view of their past performance, that they will not operate just as well?

General CHORPENING. None whatsoever.

Colonel STARBIRD. I said the contract would be let either late in the year or early next year. That should be in May of 1954.

Mr. CEDERBERG. This project is well under way and evidently is well justified. Although the cost-to-benefit ratio is not too high at 1.3 to 1, it is 80 percent complete and should no doubt be carried on.

Mr. HAND. This project almost entirely is a local project. Is it integrated with any other schemes that lend value to each other, or is it locally for the protection of the town of Maysville?

Colonel STARBIRD. It is local for the city of Maysville.

Mr. HAND. Can you give us the population and the assessed value of the city of Maysville?

Colonel STARBIRD. The population is 8,600. I do not have the assessed value.

Mr. HAND. Do you have it available readily, so you can furnish it?

Colonel STARBIRD. Yes, sir.

(The matter referred to follows:)

The overall assessed value of the city property is $15 million. The assessed value of the property within the area to be protected is $12 million. The assessed value of Maysville is approximately 30 percent of the market value.

Mr. HAND. What is the flood history here since 1937?

Colonel STARBIRD. In 1952, there was a flood causing damages of $60,000. In 1950 there was a flood causing damages of $40,000. In 1950, also, there was another flood that caused damages of $80,000. In 1948 there was one causing damages of $600,000.

Incidentally, my information earlier than 1950 only takes in the greater floods causing damages. The flood of 1945 caused damages of $600,000; the 1943 flood caused damages of $195,000, and the 1940 flood caused damages of $110,000.

Mr. HAND. Are the works constructed so far useful in themselves?

Colonel STARBIRD. They are useful in themselves and cause a partial protection to the city. They are short of pumping plants, though, in addition to being short in levee protection in one section.

Mr. HAND. In view of the fact you received $1 million last year and you have $600,000 left and perhaps will wind up at the end of this fiscal year with $1,600,000, can it be said we really overappropriated last year, or was there some reason you could not go ahead with it?

Colonel STARBIRD. No, sir; we could have gone ahead with the contract earlier and to date we would have brought the unexpended to zero. However, we have tried to follow the desires to reduce expenditures in fiscal year 1954 by rescheduling those units that could be brought to completion within the same time as far as flooding is concerned and at the same time proceed at an economic rate.

VALUE OF LOCAL CONTRIBUTIONS

Mr. HAND. Do you have any figures as to the estimated money value of the local contributions?

Colonel STARBIRD. Yes, sir. It is estimated as $525,000.

Mr. HAND. Does that coincide with the amount of their bond issue?

Colonel STARBIRD. No, sir; but I know they have had earlier bond issues.

General CHORPENING. There was a $275,000 bond issue at an earlier time.

Mr. HAND. The pending bond issue is for how much? What is at present the balance between the $275,000 and the other?

General CHORPENING. The present bond issue is for $250,000. This makes up the balance required between the $275,000 and the total requirement of $525,000.

Mr. HAND. Now, can we pinpoint the status of this local bond issue a little more closely. You say it is in progress: Where does it stand, if you know?

Colonel STARBIRD. I do not have that. I will have to get that for the record.

(The matter referred to follows:)

Bonds are now in the hands of a holding company and would have been sold prior to this time except for minor legal technicalities which will be resolved by February 20, 1954. As soon as these technicalities are resolved, funds will be made available for the remaining right-of-way.

PINEVILLE, KY.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$53,837	$211,258
Dec. 31, 1953	289,016	456,125
June 30, 1954 (estimate)	90,500	155,800

STATEMENT OF AVERAGE ANNUAL BENEFITS

Pineville is a residential, trading, and educational center for the important coal mining and lumbering industry of southeastern Kentucky. Floods seriously affect the ability of workers to maintain the flow of those vital materials. The top grade of the levees and walls of the Pineville project will provide appropriate freeboard above the maximum flood of record (January 1946) which inundated an area within the present city limits of 300 acres, embracing the greater part of the residential section and essentially all of the business district. The area to be protected contains approximately 563 dwellings, 121 commercial and industrial buildings, and 18 units of institutional property. Average annual flood-control benefits are estimated at $175,700.

Average annual charges: Average annual charges for the project are estimated at $97,200.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force: (*a*) Flood wall and drainage facilities for unit 1, Pineville section	$320,000
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955:	
(*a*) Levee embankment, Pineville section	160,500
(*b*) Floodwall, unit 2, Pineville section	418,000
(*c*) Levee embankment and drainage facilities for Wallsend section	122,500

Mr. RABAUT. The next item will be the flood-control project at Pineville, Ky. The total estimated Federal cost is $1,692,000; the total appropriations to date are $674,000 and the appropriation requested for fiscal 1955 is $260,000, which will bring the project up to 55 percent completion. The balance to complete after 1955 is $758,000.

Would you justify the necessity for the $260,000 requested in 1955?

Colonel STARBIRD. Yes, sir. That money, with the carryover funds, would be spent for the following: $75,900 in the Pineville unit—this is a 2-unit system—to initiate the levee and 1 closure structure, and $216,700 on the second section of the Pineville wall; also $78,200 to continue the drainage and pumping plant planning.

On the other side of the river, the walls under the unit, we would initiate the levee and drainage work there at an expense of $45,000. Those would be the units and the sums involved.

Mr. RABAUT. A total of what?

Colonel STARBIRD. The total would be $415,800 from which you would subtract the carryover of funds of $155,800.

Mr. RABAUT. Which is unexpended?

Colonel STARBIRD. That is correct; $90,500 is estimated to be unliquidated. The remainder is estimated to be unobligated at the end of the year.

Mr. RABAUT. What are the reasons for the structural modifications which added $131,000 to the cost of the project?

Colonel STARBIRD. The following modifications have been made in the project since last presented to the Congress: The height of the structures at the upper end of the project above Pine St. bridge was increased to provide a minimum freeboard allowance of 5 feet; improving the drainage from the protected area resulted in increasing the capacities of two pumping plants previously contemplated and providing an additional pumping station of 3,000 gallons per minute in the Pineville area; other minor changes in location of structures and substitution of walls in lieu of levees in certain sections of the project.

The effect of these modifications resulting from detailed design increased the construction cost in the amount of $131,000. However, these modifications resulted in an overall reduction in the project cost due to decreased land requirements.

Mr. RABAUT. How do the savings in cost affect the local interests in their contribution?

Colonel STARBIRD. They reduce the local interests contribution; they reduce it from something over $600,000 to an estimated $282,000.

Mr. RABAUT. There will be a drain upon the local interests of about $282,000, but they are only going to have a $200,000 bond issue. How do they intend to finance it?

Colonel STARBIRD. I cannot answer that. I do not know whether they have some funds available already, or whether they will do it by a later bond issue.

Mr. RABAUT. Has that question been raised at all with the community?

Colonel STARBIRD. As far as the bond issue, we would not raise it; as long as they provide the lands, rights-of-way, relocations and the like on schedule. We would no interfere, of course, with their method of financing it. The district engineer would keep informed in this regard but I do not have that data available.

The properties affected by the construction along here and already scheduled to be started during the current fiscal year, of course, have been acquired.

LAND ACQUISITION

Mr. RABAUT. What is the status of the land acquisition?

Colonel STARBIRD. They have acquired the lands and rights-of-way for the work for this fiscal year. We have recently turned over to them the full design of the overall project.

Mr. RABAUT. What is the program for 1955?

Colonel STARBIRD. I do not have their program for 1955. As General Chorpening mentioned, we normally do not insist too hard on the acquiring of the land until we have an indication of the appropriation, if there is a good possibility local interests can acquire the lands in the time available.

Mr. DAVIS. Will this project do the same kind of a job with the modifications that you indicated as would have been true without those modifications?

Colonel STARBIRD. Yes, sir; there is no real change in the scope of the job.

The modifications which I defined for the Lineville area provide more adequately for the protection required. The overall length of the levee and wall has been decreased slightly; I think we are now going to build that about 6,800 feet, and originally the project document called for something like 7,100 feet.

This increase in the pumping plants would amount to only about $70,000 overall. It would give us a chance of eliminating the intercepter sewer. I do not have the exact figures, but I understand that there is a net savings as far as the intercepter pumping plant change is concerned.

As far as the wall is concerned, what we have done there is to put in a more satisfactory overall plan. We have increased the Federal cost slightly, but we have decreased to a greater extent the overall cost of the project.

This project has a very interesting history, and I will not cover very much of it. This project was studied once, and they came to the conclusion that it was desirable to have a higher degree of protection than here given. It could not be justified because local interests could not afford to have paid the amount that they would be called upon to assume in connection with the very high and very broad levees that would be required.

The matter was restudied again. We increased the wall height above the bridge, but there is no change in the degree of protection there. There is still the old degree of protection against the maximum flood of record, but we found there is a backwater effect to be expected there.

LOCAL CONTRIBUTIONS

Mr. DAVIS. I am a little concerned over the fact that after the initial funds for construction had been appropriated, we now find that the project has been changed a little bit, and it results in the Federal Government costs increasing while the local interest costs do not. I am wondering whether the pressures from local interests had anything to do with the modification of the project?

Colonel STARBIRD. I do not believe that the pressures had anything to do with it, sir. The city has been most cooperative. We have continued our detailed design so as to get the best overall system. It would seem rather undesirable to plan a system having greater overall costs—substantially greater overall costs—at the expense of local interests.

Mr. DAVIS. Under the modifications, then, the local contribution here would be completely in conformance with the pattern that you are using in other local flood-protection projects; is it not?

Colonel STARBIRD. It will be completely in that pattern; yes, sir.

Mr. HAND. Is this purely a local project, Colonel?

Colonel STARBIRD. This is purely a local project, but it protects two separate areas—one on each side of the river.

Mr. HAND. Have you heretofore put in the record the estimated cash value of the local contributions?

Colonel STARBIRD. I think I have, sir. It is estimated as $282,000 exclusive of maintenance and operation.

Mr. HAND. Do you have figures indicating the population and assessed value of this community?

Colonel STARBIRD. I shall have to furnish that separately.

(The information requested is as follows:)

Area	Total population	Total assessed value	Estimated market value	Percent of population protected
Pineville (excluding Wallsend)	3,111	$2,955,000	$7,390,000	90.0
Wallsend district	789	275,000	326,000	100.0
Total	3,900	3,230,000	8,216,000	91.8

Mr. HAND. Except for our natural interest in our fellow citizens, what is it here at Pineville we seek to protect that has any national significance?

Colonel STARBIRD. It would be hard for me to say that it had any national significance. It is a purchasing area for the surrounding community.

Mr. HAND. We were discussing a moment ago the fact that the original plan for full protection here was of such a cost that it could not be justified on a benefit-cost ratio, and it leads us to some consideration as to whether this plan may prove to be inadequate in the future. Are we faced with the problem that if it does prove to be inadequate, that the local interests will come complaining to us and say, "Now, this is not good enough; you will have to build it higher"?

Colonel STARBIRD. When we build these local protection projects, we make it very clear to the local interests that we are giving them protection against a flood of a certain height. That is, either a 50-year flood, or a 100-year flood, or whatever we compute. And in this instance, as I recall, we are protecting against the 1946 flood.

There are places—and we run into this occasionally—where you cannot build a project to protect against the maximum flood we can foresee, and have an economical project. It just costs too much.

Mr. HAND. I can understand that. What I am concerned about is whether we will have to build more later if it does prove to be flooded.

General CHORPENING. As of this time, we could not recommend

and we could not justify such a project if we were asked to review the situation.

Mr. RILEY. What is the population of Pineville? Did you testify to that?

Colonel STARBIRD. I have not yet, sir. I will have to furnish it separately.

Mr. RILEY. Would you also furnish the percentage of the population which is affected?

Colonel STARBIRD. Yes, sir; I shall be glad to do so, sir.

Mr. RILEY. If you will put that in the record, I will appreciate it.

Colonel STARBIRD. All right, sir.

(The information requested appears on page 340.)

CUMBERLAND, MD., AND RIDGELEY, W. VA.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$163,474	$919,056
Dec. 31, 1953	400,412	844,781
June 30, 1954 (estimated)	20,000	152,500

STATEMENT OF AVERAGE ANNUAL BENEFITS

The project will provide flood control benefits to approximately 350 acres in Cumberland, Md. and Ridgeley, W. Va. Of this area, 98 acres comprise the main business district of Cumberland and the balance is residential and scattered commercial and industrial establishments. Vital railroad facilities in these areas which are subject to damaging floods, will also benefit from this project. Average annual benefits for flood control are estimated to be $919,800.

Average annual charges: Average annual charges are estimated at $692,100.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Dam, overflow section	$721,200
(*b*) Channel, Wills Creek, section 1	1,723,400
Proposed in fiscal year 1954 but not yet in force: (*a*) Floodwall structure, Potomac River section 1 (West Cumberland, Md.)	227,000
Proposed in fiscal year 1955: (*a*) Channel, levee embankment (Potomac River section 1, Ridgeley, W. Va.)	1,730,600

Mr. RILEY. The next project to be considered is the Cumberland, Md. and Ridgeley, W. Va., project, which has a total estimated Federal cost of $15,391,000.

The total appropriations through fiscal 1954 were $5,839,200, and then for the next fiscal year you are asking for $600,000.

Would you please explain how this $600,000 is to be used?

Colonel STARBIRD. Yes, sir. The $600,000, with the carryover, would be used as follows, sir:

We are moving a dam located in the Wills Creek, which you can see on the map, over to the north branch to avoid constriction at Wills Creek; we will continue and complete this work during 1954 at an expense of $79,100; we will continue the acquisition of the channel lands in the amount of $160,900; we will initiate the channel work as shown on the right-hand side of your map, the southern side, on the main channel of the Potomac River at a cost of $135,600; we will initiate the work on the levees connected therewith at a cost of $200,900; we will continue to completion a section of wall which you

can see in green just above the new industrial dam, at a cost of $159,000, and we will continue planning on the pumps at a cost of $17,000.

I mentioned that the levees were in connection with the channel work downstream. That is not correct. They are levees on the upper section along the North Branch. That was the item at a cost of $200,900.

Mr. RILEY. Who owns this industrial dam, and what is it used for now?

Colonel STARBIRD. It is for industrial water supply.

Mr. RILEY. For private industrial plants?

Colonel STARBIRD. For industrial plants; yes, sir.

Mr. RILEY. You are taking it out of the confluence, I believe, of the Wills Creek, and Northern Branch of the Potomac, and are just putting the dam in at the Northern Branch of the Potomac and leaving Wills Creek to run free?

Colonel STARBIRD. That is correct. We can get the same storage with less constriction by moving over into the North Branch.

Mr. RILEY. But, when you do that, it necessitates your building some levees on that Northern Branch?

Colonel STARBIRD. I believe we would have had to build some anyway.

Mr. RILEY. You said that this $600,000, jointly with the carryover, will be used for the purposes that you mentioned. What is the carryover?

Colonel STARBIRD. Our estimated carryover is $152,500 unexpended, and of that amount which was estimated as of the 30th of June, we estimate about $20,000 to be unobligated.

Mr. RILEY. That will all be used in fiscal year 1955?

Colonel STARBIRD. That is right.

In establishing our 1955 request, we have considered those funds.

Mr. RILEY. What is the status of the local cooperation? Are you having any trouble?

Colonel STARBIRD. We have already been furnished all lands required through 1954. We do have good cooperation at the present time through local interests. The work concerned in this particular year, I believe, will not require extensive lands. You can see that a large portion of it is channel work and a large portion is the dam itself. There will be some land requirements in the form of upstream levees.

Mr. RILEY. Do you have any figures on the population of Cumberland?

Colonel STARBIRD. Yes, sir; Cumberland and Ridgeley has a population of approximately 49,000, as of 1951.

Mr. RILEY. Are there industrial plants in that area which are involved in this protection?

Colonel STARBIRD. Yes, sir; the big floods in the past have damaged industrial plants in the area. Those plants include the Celanese Corporation of America; the main plant of the Kelly-Springfield Tire Co.; a power-generation plant of the Potomac-Edison Co.

In addition, Cumberland is a division point on the B. & O. and the Western Maryland Railroads, both important main rail routes between the East and Middle West.

Mr. RILEY. What is the flood history there?

Colonel STARBIRD. The major floods occurred in 1936 and 1924. The 1924 flood caused damages of $4 million, and the 1936 flood caused damages of $2,364,000.

Escalating to the present situation, those two floods recurring would cause damages of over $18 million. There have been very small floods in 1953, 1951, 1950, and 1949.

Mr. DAVIS. This increase of about $650,000, since it was presented to the committee last year, is purely a matter of increased construction costs; is it not?

Colonel STARBIRD. It is a price-level increase; yes, sir. In other words, increased estimated costs of the work to be done.

ADAMS, MASS.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$53,586	$55,586
Dec. 31, 1953	43,454	43,743
June 30, 1954 (estimated)	None	None

STATEMENT OF AVERAGE ANNUAL AVERAGE BENEFITS

The project will provide protection to the town of Adams against Hoosic River floods. Protection will be afforded to 4 major industries engaged in the manufacture of paper, cotton and woolen goods, and printing of textiles; 125 wholesale and retail commercial establishments; 2 banks; 500 residences; 8 public buildings, public roads, and public utilities and services, with a total estimated real value of all physical property of $24,600,000 (1949). Average annual benefits are estimated at $341,100.

Average annual charges: Average annual charges are estimated at $252,200.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force	None
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955	None

Mr. DAVIS. The next project is at Adams, Mass.

We have an estimated total Federal cost of $5,406,000, and the total appropriations to date have been in the amount of $844,000.

We have before us a request for $560,000 to bring the project to about 25 percent of its required funding.

This project was brought before the committee last year, for the purpose of resumption, and the committee decided at that time to permit it to remain dormant. In the meantime, I notice that the total estimated Federal cost has increased about $350,000.

What is the explanation of that?

Colonel STARBIRD. That is a price level change also. There is no change in the structures involved.

Mr. DAVIS. How much work had been accomplished by the time this project was suspended?

Colonel STARBIRD. Construction of the first unit of the project for channel excavation, drop structure, and stilling basin, paving, and concrete walls in the main stream from below Hoosac Street to Murray Street, and on Tophet Brook mouth to Mill Street, was completed on April 3, 1952.

Construction of the second unit for channel excavation and paving and concrete walls on Tophet Brook from Mills Street to Hoosac Street, was completed on November 20, 1952.

The only work we have completed since that time, of course, was certain planning with respect to the second unit.

Mr. DAVIS. When did you receive your first construction funds?

Colonel STARBIRD. The construction was started in 1950.

General CHORPENING. The first construction appropriation was for fiscal year 1950.

Mr. DAVIS. What is the date of the last appropriation which you received on this project?

Colonel STARBIRD. 1952 fiscal year.

Mr. DAVIS. What is your proposal in regard to the $550,000 which is before us?

Colonel STARBIRD. As you will note, sir, the section accomplished to date is the small Y section. The section to be undertaken with the funds requested is that from Murray Street to unit 3, and down to Cook Street.

The funds available from the proposed appropriation would be used in planning dam removals along the stream in the amount of $5,500. For channel planning unit 4 and completion of unit 3, in the amount of $126,600; to initiate walls in unit 3, $397,000; to initiate and complete the drains in unit 3, $10,900; a repayment of a loan that was used on the planning to the extent of $20,000.

Mr. DAVIS. How large is the town of Adams?

Colonel STARBIRD. Twelve thousand eight hundred population.

LOCAL PARTICIPATION

Mr. DAVIS. What have they contributed for their own protection?

Colonel STARBIRD. They have contributed an estimated $624,100 in the form of lands, relocation, maintenance and operation and protection against damages.

Mr. DAVIS. Does the work which you have completed afford reasonable protection for a good share of the industrial development at Adams?

Colonel STARBIRD. I think it would be limited protection only until such time as we get the other improvements, particularly downstream, so that the water can be carried off.

Mr. DAVIS. I do not doubt but what we could point to scores of towns about the same size as this, that would have the same flood damage and probably have as much claim for Federal assistance and flood protection as this; could we not?

Colonel STARBIRD. There are many that need flood protection, sir.

General CHORPENING. They include new starts which have been carefully selected and those that have been under consideration before, all having a high benefit-cost ratio.

Mr. DAVIS. The local interests were to provide the funds, as I understand it, for bridge abutments and relocations.

Did the funds they provided meet that cost?

Colonel STARBIRD. They are providing the cost with respect to that item.

Mr. DAVIS. Has your local cooperation been completely satisfactory?

Colonel STARBIRD. Yes, sir; it has been satisfactory.

Mr. DAVIS. Your plans and specifications for going ahead with this contemplated work are up to date; are they not?

Colonel STARBIRD. Yes, sir; the plans and specifications for the third unit—the unit for which funds are requested in 1955—have been completed.

Mr. HAND. To what extent, if any, Colonel, has the construction so far accomplished in the protection of all or part of the town of Adams against floods?

Colonel STARBIRD. It is of limited use only, for all of Adams. It is of partial benefit to a small portion of Adams. Adams is a city in a very steep-sided valley where it is quite long for its width. The section so far completed along the main river—from the map—would appear to be about 10 percent of the length.

Mr. HAND. Would it afford complete protection to that 10 percent, or is that only partially?

Colonel STARBIRD. It would be only partial, because you would, naturally, have the constriction below until such time as the channel is improved downstream.

Mr. HAND. Would your answer be changed or modified in any way at all, if a part of the present appropriation were allowed and the work did not proceed any further than that?

Would that provide any substantial measure of protection?

Colonel STARBIRD. It would provide added protection. It would take quite a detailed computation to show what that would be, sir. As long as we move downstream there is an added measure of protection, but it is slight, until we get the water out into the open.

Mr. HAND. It is comparatively little unless the entire project is completed; is that right?

Colonel STARBIRD. That is right.

Mr. HAND. I thought, we were going to look forward to the fact if we are going to protect this town, we will spend $5.5 million plus; is that right?

Colonel STARBIRD. If they get adequate protection, yes, sir.

Mr. HAND. When you said that the contributions that were made were made in the form of some $600,000 plus, have they actually all been made?

Colonel STARBIRD. No, sir.

Mr. HAND. Are they proposed to be made to that estimated value?

Colonel STARBIRD. That is not a contribution; that is in the form of lands, relocation, and damages.

Mr. HAND. I did not mean cash. I mean that is the estimated value of the contribution?

Colonel STARBIRD. That is the estimated value of contribution to be made available in the form of rights-of-way and so forth, as and when needed for the prosecution of construction.

Mr. HAND. But all of the lands and easements, and so forth, are available?

Colonel STARBIRD. No, sir; they are not all available, I am certain.

Mr. HAND. Are you satisfied that all will be available at the proper time?

Colonel STARBIRD. We have the assurances, sir, and have accepted those assurances as being satisfactory.

Mr. CEDERBERG. Do we aggravate the situation below to the point which the improvements are made by not carrying the project to its complete conclusion for a period of time?

Colonel STARBIRD. I would say there is some aggravation in the situation there, if you carry it to a point where you have increased the velocity of water through one section and allowed it to run into a constricted section not designed to receive it.

General CHORPENING. In other words, if you start this work which we are asking for only a part of, I think we should carry it to completion.

Mr. CEDERBERG. We should do it all or none of it?

General CHORPENING. Well, now is the time for decision, especially if you are going to appropriate funds. We should decide now as to whether we are going ahead and complete this project. Since we have gone ahead with preparations with the city on that basis, and since they have to save the Government from harm resulting from construction of the project, we have placed them in a position where if we did not complete it, they possibly would have charges against the Government.

Mr. RILEY. General, do I deduce from the plan shown here from observing the check dam and stilling basin that this water comes down in great force and volume at periodic times?

Colonel STARBIRD. It is a relatively great force in frequent high floods.

Those dams are not so much check dams as they were old industrial dams which were developed in the time that industry used a lot of water.

Mr. RILEY. What is the situation with regard to this stilling basin?

Colonel STARBIRD. Excuse me, sir. I thought you were referring to the old dams in there for removal.

Yes; where we have stilling basins, you have a situation where, generally, you have conducted the water through a concrete channel to a point where it goes into a channel less able to take erosion, such as the portion of the earth channel. Therefore, you have a stilling basin, wherein the water is dropped a short distance, and its velocity reduced.

Mr. RILEY. I notice here in the justifications that you have check dams, and they also show on the map.

I assume that those were dams to slow it down.

Mr. RILEY. I suppose that the water does come down there rapidly.

Colonel STARBIRD. That is correct; it does come down rapidly.

AITKIN, MINN.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$302,951	$800,000
Dec. 31, 1953	235,708	307,836
June 30, 1954 (estimated)	7,900	187,000

STATEMENT OF AVERAGE ANNUAL BENEFITS

The project will provide a substantial degree of flood protection for the agricultural lands above Pine Knoll as well as for the community of Aitkin, Minn. About 38,000 acres of farmland will be benefited by the project in addition to the protection that will be provided rural property and highways and bridges. In the village of Aitkin, which had a 1950 population of 2,071, residential and business property will receive benefits. The benefited area at Aitkin includes a number of industries of which the most important are 3 lumber mills, a furniture factory, a large creamery, and 4 agricultural produce-processing plants.

Average annual benefits, exclusively flood control, are estimated at $99,180.

Average annual charges: Average annual charges amount to $78,990.

Data on continuing contracts	*Total estimated contract earnings*
Description of work:	
Continuing contracts in force: (*a*) Channel-main channel and Wakefield Creek	$1,020,500
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955: (*a*) Aitkin flood diversion channel, inlet structure, and bank protection	264,200

Mr. DAVIS. The final project for the afternoon will be the one for Aitkin, Minn., which has a total estimated Federal cost of $1,769,600, and the appropriation to date has totaled $1,269,600.

We have before us a request for $500,000 for the completion of the project.

I notice, General, that it appears that there was an interruption in the appropriation for this project, but apparently no interruption in the actual work. Can you explain that for us?

Colonel STARBIRD. I believe that was caused by a carryover of funds into the fiscal year 1954.

Mr. DAVIS. Does that mean that you had some unusual delay in the construction of this project?

Mr. COHEN. It was more a matter of scheduling the contract. The contract was actually let, or was scheduled over a longer duration than originally contemplated.

General CHORPENING. The longer schedule was more advantageous for the Government in this instance. In other words, the Government saved money. I might say we had quite a little discussion with the local interests who were very anxious to get the work done sooner; but we concluded that since it was less costly to the Government, we would proceed with our revised schedule. It was a difference in the method of construction. The original proposal was to do the work by dragline, as I recall. The contractor proposed to do it by dredges, rather than dragline and trucks. The work has been going along very well.

I personally inspected this project last summer; it so happened that there was a flood on at the time. There were substantial advantages to be gained by this in observing how the partially completed improvements were helping alleviate the flood condition.

Mr. DAVIS. It appears that while there was no appropriation for the current fiscal year, there will be an expenditure in the neighborhood of about $600,000.

Colonel STARBIRD. Approximately; slightly over $600,000.

Mr. DAVIS. That is spread out over the work, by the lower method, and that has evidently paid off to the tune of about $160,000 of a downward revision of the total cost estimate.

General CHORPENING. That is correct.

Mr. DAVIS. What are the remaining items that need to be done with the $500,000 in order to bring the project to completion?

Colonel STARBIRD. The additional work that needs to be done includes the completion of the main diversion channel, complete the upper curve bank protection, approach channel, and inlet structure; initiate and complete Little Willow River diversion and county ditch No. 11 drop structure.

The costs involved for the channel work, which includes the main diversion channel, the upper curve bank protection, approach channel, Little Willow River diversion and drop structure are $537,900; the inlet structure is $149,100.

Mr. DAVIS. The completed work, as it now stands, is providing some protection—not enough to ward off rather substantial floods of this last year.

Colonel STARBIRD. That is correct.

Mr. DAVIS. Had this project been completed, would it have given the entire protection against the 1953 flood?

Colonel STARBIRD. It would have protected all except around $20,000 of damage that occurred in this area.

Mr. DAVIS. How large is Aitkin?

Colonel STARBIRD. Aitkin had a population of about 3,100 in 1950.

Mr. DAVIS. There is a considerable amount of this for the protection of the surrounding agricultural lands; is that correct?

Colonel STARBIRD. Yes. The diversion affects that whole area, along a 24-mile strip of the river. Thirty-eight thousand acres of farmland will receive benefits from this project.

Mr. HAND. Did you ask for an appropriation for this project last year, General?

General CHORPENING. It was not included in the President's budget.

Mr. RILEY. This will straighten out the river—more or less straighten out the channel?

Colonel STARBIRD. It diverts the flood flow.

Mr. RILEY. It does not take all of the water?

Colonel STARBIRD. It does not take all of the water.

FRIDAY, JANUARY 22, 1954.

RED RIVER OF THE NORTH, S. DAK., N. DAK., AND MINN.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$336,541	$556,455
Dec. 31, 1953	730,067	1,052,596
June 30, 1954 (estimated)	49,600	693,400

STATEMENT OF AVERAGE ANNUAL BENEFITS

The Red River of the North drainage basin project provides for improvements in the interest of local flood protection and major drainage by means of channel improvements on the lower Sheyenne, Maple, and Rush Rivers in North Dakota, on the Mustinka, Otter Tail, Wild Rice-Marsh and Sand Hill Rivers in Minnesota, and on the Bois de Sioux and Red Rivers in the vicinity of Wahpeton, N. Dak., and Breckenridge, Minn.; local flood protection in the urban areas of Fargo-

Moorhead and Grand Forks-East Grand Forks by means of channel improvement at Fargo-Moorhead and levees and floodwalls at both locations; and a multiple-purpose reservoir at the Orwell site on the Otter Tail River, Minn., to assist in the control of floods and in providing increased low flows for water supply and pollution abatement purposes. The project is a basinwide flood control and water utilization project. Frequent and prolonged flooding of rich agricultural land throughout the basin and the occurrence of serious urban damage by a succession of major floods within the past 11 years have caused widespread economic distress. Problems of water supply and stream sanitation during periods of low flow are becoming more pronounced with the recent growth of urban population and industry. Provision of flood protection along the main stem and tributaries and increased low-water flows in the main stem are considered essential to continued economic well-being of the major food-producing area of the Red River Valley. Average annual benefits are estimated at $1,036,160.

Average annual charges: Average annual charges are estimated at $631,650.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force: (*a*) Channel-Mustinka River unit	$329,000
Proposed in fiscal year 1954 but not yet in force:	
(*a*) Channel-Sand Hill River unit	617,600
(*b*) Levee embankment, channel, pumping plants, and drainage facilities, Grand Forks	715,800
Proposed in fiscal year 1955: (*a*) Channel, Rush River unit	491,900

Mr. DAVIS. The first project before the committee this morning is the Red River of the North, North Dakota and Minnesota.

This project has a total estimated Federal cost of $12,231,900. The appropriations to date, including $720,000 in the current fiscal year, have been $3,786,100, and the request before us is for $375,000 for the fiscal year 1955.

I think first of all we will ask you to tell us what you are doing with the $720,000, and what you plan to do with the $375,000.

Colonel STARBIRD. I will ask you to glance at the map. We have completed one of the 10 units of the project, or will complete it with the 1954 money. That unit is the Wild Rice unit. We have another underway that will be substantially completed with the 1954 money, the Otter Tail unit. We also have underway or will undertake with the 1954 funds three other units, working from the south to the north. The first is the Mustinka unit, on which the contract has been awarded. The second is the Sand Hill unit, and the third is the Grand Forks section of the Grand Forks-East Grand Forks unit.

The $720,000 which you mentioned, I assume, is the figure for the forecasted unexpended balance——

Mr. DAVIS. No; that was the appropriation for the current year.

Colonel STARBIRD. Excuse me, yes, the appropriation for 1954.

The work underway and to be completed with that appropriation is that which I have just described.

We will carry over into 1955 an estimated unexpended sum of about $693,000. Part of that is due to savings, and a part of that is due to the attempt to work out with local interests a more satisfactory alinement of certain of the units, and hence consequent delay in completion of planning and awarding of contracts.

We are requesting $375,000 for 1955, for the following work. We will complete the Otter Tail unit. We will continue the three units, the Mustinka, the Sand Hill, and the Grand Forks, and we will initiate work on one additional unit.

The total funds available, including the carryover, will be applied in this manner, sir:

To continue and complete the Orwell Spillway-Gates, $55,400; to continue the Mustinka unit, $134,400; and to continue the Sand Hill item, $229,600.

To continue certain planning for later units, $24,700.

To continue the Grand Forks unit, $465,000. And, finally, to initiate the Rush River unit, $102,100.

LOCAL COOPERATION

Mr. DAVIS. In that connection, Colonel, it appears that your local cooperation in this area has not been quite what it could be; at least, that is the recollection that I have of it.

What assurance can you give the committee with respect to this Rush River project that you plan to initiate during the fiscal year 1955?

Colonel STARBIRD. The Rush River Conservancy District has been formed and is in the process of furnishing assurances for this unit. They are attempting to secure the necessary rights-of-way at no cost to the district, prior to furnishing of assurances. We intend to ask for those assurances in the near future; as was explained yesterday we hesitate to request assurances until we can give them a better idea of the program.

The local county board of commissioners has furnished the conservancy district with resolutions assuring the district that the county will make all necessary repairs and alterations to the bridges involved. The district engineer expects the local interests to have secured the necessary rights-of-way by May 1954.

I might mention that there was quite a period of high water in this area this past year, and there is a great deal of interest therefore in that particular unit.

Mr. DAVIS. Now, last year in the hearings, again, trusting to recollection, it appears that the local cooperation for the Grand Forks-East Grand Forks area, left something to be desired. What can you tell us about the development there?

Colonel STARBIRD. The difficulty last year, described in the hearing, was in one-half of the unit, the East Grand Forks unit.

No appropriation was made for that unit for the fiscal year 1954. I do not know the exact status of the assurances, since there is no appropriation for prosecuting work at East Grand Forks.

However, on the Grand Forks side our work is in an area that was very well developed. We therefore have had as I mentioned earlier, some delay with respect to that unit in an attempt to work out the best and cheapest alinement with the local interests and the property holders.

Mr. DAVIS. What is going to be the effect of building up the protection on the Grand Forks side without a similar protection on the East Grand Forks side of the river?

Colonel STARBIRD. The district engineer and the division engineer were asked to look into that some time ago. They have looked into it and report that the effect would be negligible.

Mr. DAVIS. Whose responsibility is it, in case damage results? You will recall our discussion on the projects in the Mississippi River

area yesterday, a series of them, and there was some discussion of the effect on one side of the river when you did build up levees on the other side.

General CHORPENING. I consider that the assurances signed, in this instance by the Grand Forks authorities will save the Government from harm. They do protect the Government if there were, in fact, any damages. As has been stated by Colonel Starbird, our district engineer has looked into the situation and stated that the effect there would be negligible. But I do consider that the assurances would take care of the situation as far as the Federal Government is concerned. If we considered that there were any real damaging effects to be expected, we would, of course, make that very clear to the local interests, and probably would not go ahead with the construction, because even though we have those assurances it would be undesirable to have any suits result therefrom. You recall, we had a similar instance down in Hutchinson, regarding the South Hutchinson unit, but that was resolved, the South Hutchinson people did agree, and we did build that unit.

Mr. DAVIS. We have your assurance, then, that with respect to this initiation, of this Rush River Channel improvement, that there will be definite assurances from the local area before that work actually is placed under contract; do we?

Colonel STARBIRD. As far as placing the construction underway, yes; as for now having the definite written assurances, no; we do not have them, for the reasons I have mentioned. However, we believe their organization and interest is such that we will get them soon after making our request for such assurances.

Mr. DAVIS. These various units that are listed on the map, at page 450, represent the entire group of units that are included in this authorization, do they?

Colonel STARBIRD. Yes, sir.

Mr. RILEY. These channels protect, for the most part, local communities and have no effect on the downstream flood or the upstream flood?

Colonel STARBIRD. That is generally true. There is a small reservoir in this project but generally the purpose of the project is to carry the water faster and thereby keep down flooding over quite extended reaches of the river along which there are well developed agricultural areas and some urban areas.

Mr. RILEY. This section of the river flows north into Canada, indicating that there would be no advantage to your program on the Missouri or Mississippi Rivers.

Colonel STARBIRD. That is correct. It is not a part of that comprehensive system.

RIO GRANDE FLOODWAY, N. MEX.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$208,226	$208,226
Dec. 31, 1953	419,627	434,485
June 30, 1954 (estimate)	None	None

STATEMENT OF AVERAGE ANNUAL BENEFITS

Located in New Mexico along the Rio Grande in the vicinity of Albuquerque, this unit is designed to provide substantial protection to urban and suburban areas of this city. The project begins at a point near the Sandia Indian Pueblo north of the city and extends downstream to the mouth of Tijeras Canyon Arroyo, a total distance of about 18 river miles. Construction of the Albuquerque unit, in addition to providing substantial protection for that community, would also benefit military and Atomic Energy Commission installations in the area, inasmuch as those bases are partially dependent upon the municipality for utilities, supplies, transportation, and housing facilities. Average annual benefits from the Albuquerque unit are estimated to average $304,000.

Average annual charges: Average annual charges are estimated at $228,900.

Description of work:	*Data on continuing contracts*	*Total estimated contract earnings*
Continuing contracts in force		None
Proposed in fiscal year 1954 but not yet in force		None
Proposed in fiscal year 1955		None

Mr. CEDERBERG. The next installation is the Rio Grande Floodway, having a total estimated cost of $5 million. The total appropriations to date are $693,500, and the request before us at this time is $500,000. The balance to complete after the fiscal year 1955 is $3,806,500.

General, would you advise us as to what your plans are in using the $500,000, and also the status of your plans and specifications for the proposed 1955 work?

Colonel STARBIRD. As far as the plans and specifications for the unit, they are substantially complete, and will be completed by June 30.

Also, the local interests have already acquired the rights-of-way for the section of the levee and bank protection that would be added by the funds requested in 1955.

The funds requested for 1955 will be the total amount available for expenditure that year, there being no anticipated carryover from prior year funds.

With these funds we will undertake the improvement of an additional 1.5 miles, approximately, of the levee which was installed by local interests, and which would be improved by us.

Since the breakdown is not capable of being given by topographical units, I will give a breakdown by type of work involved.

There will be $193,600 expended on embankment improvement.

There will be $99,600 expended on seepage corrective measures in connection with the embankment.

There will be $9,000 expended on closure structures, and there will be $197,800 expended on bank stabilization.

Mr. CEDERBERG. The project to date is moving along satisfactorily, and there are no unusual conditions which you think should be brought to the attention of the committee?

Colonel STARBIRD. There are no unusual conditions. The project is moving along satisfactorily. Construction was started with fiscal year 1954 funds by the construction of a tieback levee.

Mr. RILEY. This entire cost of the $5 million is for levee work?

Colonel STARBIRD. This $5 million is for basically levee work and the necessary measures to protect the levee system. In other words, the seepage measures that go with the levees, plus bank stabilization that is needed along the levees.

Mr. RILEY. As I recall, there were 1 or 2 places where it was found advisable to move the levee back—is that correct?

Colonel STARBIRD. That is correct. There were certain places where the levee will actually be moved back a short distance. Those are places where the subsurface conditions upon which the local interests put in their levee were extremely poor. It would cost more to try to put in a cutoff or otherwise improve the subsurface conditions than to move the material, plus the added material necessary, to another alinement.

Mr. RILEY. There is one other thing that I recall about this project, which is a part of the overall objective. I believe you are to go up into the foothills and build dams to catch the floodwater, and to regulate the flow of the river.

Colonel STARBIRD. That is correct.

Mr. RILEY. There is one, I believe, about completed, is there not?

Colonel STARBIRD. That is correct. It is about complete. That is the Jemez Canyon Dam, which is about 20 to 30 miles above the city of Albuquerque, and on the opposite bank of the one that you have inspected.

Mr. RILEY. That project has been funded?

Colonel STARBIRD. That project has been fully funded. There are other reservoirs, too.

Mr. DAVIS. I was going to ask you about the reservoirs, in order to complete the project, is it not correct that other reservoirs go in?

Colonel STARBIRD. Yes. Actually this is a part of a combined Interior Department-Corps of Engineers development for the extensive reaches of the upper Rio Grande. Certain reservoirs have already been undertaken between them, and there are certain others that are either authorized or are being considered.

Mr. RILEY. But this program is coordinated with the Interior Department?

Colonel STARBIRD. It is coordinated with the Interior Department.

General CHORPENING. The construction of the authorized dams, one of which, as you say, is in the Jemez Canyon Reservoir, will provide effective control. Another dam, Chamita, which will be discussed later in connection with the planning funds, which is farther upstream, is a part of this project.

Colonel STARBIRD. We are building the levees to handle a design flood of only 40,000 cubic feet per second. There is a flood of record which is estimated to have been something approaching 100,000 cubic feet per second, in the past.

In effect, we would achieve the added control necessary for our design flood by the upstream reservoirs.

Mr. RILEY. I understand that funds will be asked in another project for planning certain of these dams in that connection, and the reason I brought it up at this time is that a great deal of silt is deposited along the river bed by the city of Albuquerque, and unless these dams are constructed in the foothills, that silt is topped up there and unless it is held up there, these levees are going to be too low there within a few years, in my opinion. This is looking at it from a practical layman's standpoint, and I think that program has to be tied together, and unless the dams in the foothills are put in there at a reasonably early date, that levee work is going to be less effective.

General CHORPENING. Yes.

Mr. RILEY. Probably will suffer damage by reason of the silt being deposited down below. The floods coming out of the foothills are

rather substantial, and that was the reason I was trying to bring that into the picture at this time.

General CHORPENING. We have received planning funds in the last 2 years and have been actively prosecuting the plans for the Chamita Reservoir at the Abiquiu site, and we are asking for additional funds for this project which will tie into this local protection project.

REGULATING DAMS

Mr. RILEY. How many dams, regulating dams, are contemplated as a part of this operation?

Colonel STARBIRD. There are two dam systems authorized: a dam in the Jemez Canyon and storage on the Rio Chama, which is a major upstream contributor.

In addition, there has been recommended in the past, but was returned for further study, a main stream dam, the Chiflo Reservoir. That was not authorized. It has not been disapproved by the Congress, but for certain reasons it was not considered desirable to authorize it at that time. We are still studying the matter of a main stream dam in addition to the Jemez and the Chamita projects.

Mr. RILEY. Under this project, not only would these reservoirs regulate the flow of the river, but would maintain approximately an even flow of the stream the year round, which would be very beneficial to the irrigation projects in that part of the country.

Colonel STARBIRD. These are not designed as such. The Interior Department structures that I mentioned are, of course. The primary purpose of the operation of these would be, as you brought out, for sedimentation control and flood control.

Mr. RILEY. But they would be helpful in maintaining a continuous flow of the water in the river by proper regulation.

Colonel STARBIRD. Yes, they would. Now the water goes down the stream in a tremendous burst and is gone, whereas we would in the future let it out only to channel capacity that would not be damaging.

Mr. RILEY. I have noticed, in coming into Albuquerque, there were several miles, on the east bank of the river, that the area was green, and on the other side it was barren.

Mr. DAVIS. How are you coming along with the local interests out there?

Colonel STARBIRD. Very well. They are giving good support. As I mentioned earlier, they have already acquired the land for the next section.

Mr. DAVIS. How much credit are you taking in the benefit protection to military installations?

Colonel STARBIRD. I cannot answer that positively. I personally do not know of any military installations that are being protected directly. Of course, there would be some interference with the military installations, if the city of Albuquerque, as a railroad center and with business establishments, were flooded, those establishments lying in the flood plains behind insufficient protection.

Mr. RILEY. Mr. Chairman, as I recall, the city of Albuquerque, the highway, and the railroads are within the flood plain of the Rio Grande River and should a major flood occur it would disrupt the transportation system, which in turn would affect the Kirtland Air Force, the Sandia Base, and the Federal hospital and other Government installations.

Mr. DAVIS. You might say then that this is a protection in support of those installations, but is not a direct protection of the installations themselves.

Mr. RILEY. That is a very rough, hilly country and they have to follow the river barrier in order to get through the mountains.

BATAVIA, N. Y.

No construction funds available.

STATEMENT OF AVERAGE ANNUAL BENEFITS

This project will reduce flood stages in the city of Batavia and will eliminate about 87 percent of the average annual flood damages. The flood of March 1942 inundated 640 acres and caused damages of $462,000 at present-day price levels. Flooded area includes residential, industrial, and commercial sections. Utility services were interrupted in a larger area. The project is necessary to prevent interruption to production at 2 plants of the Doehler Die Casting Co., which supplies parts to several defense industries and to prevent delays to traffic on State Highways 5 and 33, which carry heavy through commercial traffic. It will also prevent interruption of utility services to residents of Batavia. Average annual benefits are estimated at $113,800.

Average annual charges: Average annual charges are estimated to be $43,800.

Data on continuing contracts	*Total estimated contract earnings*
Description of work:	
Continuing contracts in force	None
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955, (*a*) channel, Tonawanda Creek, structure relocations	$662,000

Mr. DAVIS. The next project is Batavia, N. Y., where we have a total estimated cost of $797,000, of which $4,000 is to come from local contributions, making the estimated Federal cost by the Government $793,000.

The appropriations to date have been $41,000, obviously for planning purposes. We have before us a request of $300,000, which appears to be for the purpose of initiating construction work on this project.

This is the first time this project has been before us for construction funds. Will you give us some background of the project, and tell us what you propose to do with the requested funds?

Colonel STARBIRD. Yes, sir. This is a project for channel clearing and widening along Tonawanda Creek which flows north and into Lake Ontario, through the city of Batavia, and which has a fairly high industrial development for a city of its size, roughly 20,000 persons.

It has a record of fairly frequent damage.

The currently estimated channel capacity is in the neighborhood of 3,500 cubic feet per second and the improvements would raise that to something slightly above 5,000 cubic feet per second.

It would not give full protection to the city. Because it is a channel improvement, however, it would be less of a hazard than would a levee that would give a reduced degree of protection.

The project has a high benefit-to-cost ratio, 2.6 to 1. It has a small overall cost; it can be constructed in a period of 2 years, thus giving early protection to the city.

With definite design study complete and completion of the plans and specifications for the first section, we would initiate, roughly, two-thirds of the channel improvement. In addition, removal of the

two structures that are blocking the channel at the lower end of the improvement, and the old pier in the upper part of the channel would be removed, under the first year of work.

The breakdown of the total funds requested, $300,000, would include planning and accomplishment of the removal of the two obstacles I mentioned at a cost of $8,600 and channel improvement at a cost of $309,300. As you can see, that exceeds slightly the $300,000. The reason is that certain of the prior engineering costs have been distributed to the features of the project.

LOCAL CONTRIBUTION

Mr. DAVIS. What is the nature of the local contribution?

Colonel STARBIRD. The local interests are to furnish the assurances that they will provide the four normal items of cooperation—lands, rights-of-way; protection against damages; maintenance and operation. I say "normal." In the case of this particular report, the relocations involved are the blocking structures I mentioned, the document recommending the contribution in this particular project of a fixed sum to be contributed toward removal of those structures. Therefore, the relocation of those items is not a responsibility of the local interests, but when they furnish other lands and rights-of-way it is their responsibility to furnish those without encumbrances for the construction of the particular project.

The estimated total cost to the local interests is $231,030. The assurances will be furnished by the State of New York, which will actually arrange for the procurement of the lands and rights-of-way and will give the assurances. They normally do not give assurances until they can go over the actual plans and specifications and have a knowledge of the appropriation of funds. For that reason they simultaneously, with the giving of the assurances, obligate the necessary funds for the accomplishment of their portion of the work.

Mr. DAVIS. You consider the local cooperation, then, to be completely satisfactory?

Colonel STARBIRD. We do, sir. The progress to date is entirely satisfactory and fully in keeping with the construction appropriation for 1955.

Mr. DAVIS. You mention that some planning was required and the removal of those two obstacles, I believe this year. Is the planning of the remainder of the project completed?

Colonel STARBIRD. The planning of the project is not complete. It would be completed by the end of the fiscal year. Actually the schedules given show the actual completion on the 1st of September, with the awarding of the contract to be made on the 1st of October for the main portion of the work, and for the removal of the structures. The removal of the structures is, of course, a very small task and we intended to carry over no funds into the next fiscal year.

Mr. DAVIS. You propose to handle this project completely in 2 fiscal years, then?

Colonel STARBIRD. In 2 fiscal years, yes, sir.

CORNING (MONKEY RUN), N. Y.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$612,112	$693,063
Dec. 31, 1953	337,844	735,730
June 30, 1954 (estimated)	None	300,000

STATEMENT OF AVERAGE ANNUAL BENEFITS

The area to be protected by the improvement includes both residential properties and most of the south side business and industrial section of the city of Corning. The improvement will eliminate a flood menace to over 100 residences, and approximately 50 commercial establishments. It will also prevent interruption, by floods, of the operation of the main plant and research laboratories of the Corning Glass Works, the principal industry in the city. The plant is the major or sole source of supply for many of the military and essential civilian products, including optical glass for use in bombsights, tank periscopes, fire-control instruments, serial camera lenses, and glass pipe for use in atomic energy plants. Average annual benefits are estimated at $321,700.

Average annual charges: Average annual charges are estimated at $83,400.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force: (*a*) Conduit and drainage facilities	$537,000
Proposed in fiscal year 1954 but not yet in force: (*a*) Flume and drainage facilities	607,000

Mr. RABAUT. The next item is the flood control project at Corning, N. Y. The financial data on this project is set up as follows: Total estimated Federal cost, $3,656,000; appropriations to date, $3,156,000, bringing the project to 86 percent completion. The amount requested for fiscal 1955, $500,000, will bring the project to completion.

Colonel, will you give us the assurance that the work will be completed with the funds requested?

Colonel STARBIRD. We believe we can complete the project with the funds requested. I might mention that our form on this project might be a little confusing. The improvement here consists of two phases. One phase that was completed in 1943, that is, the main line levee system along the river, was completed at a cost of $2,160,000. The figures which you just stated of the total estimated cost includes the cost of the work.

The particular unit we are now concerned with is an adjunct of that levee system to take the waters that come in through a tributary stream and get those waters rapidly into the river.

I might mention also that this project has been radically reduced in cost since last year; therefore we have reduced the schedule for construction from 3 to 2 years. The reduction in cost was partially due to favorable bids. However, it is largely due to the fact that the State of New York, in connection with the construction of a superhighway, is going to build the pumping plant, which voids the necessity of our building a pumping plant.

Mr. RABAUT. I notice the principal industry here is the Corning Glass works and it has been surveyed as a critical defense plant by the Munitions Board, and the National Production Authority has given its approval and recommendation for construction.

I am glad to know that you feel you will complete this project in the fiscal year 1955 if the committee sees fit to allow the $500,000, and that approval and recommendation of the construction is given by the National Production Authority.

Mr. RILEY. Did I understand the local interests here have cooperated fully on this project?

Colonel STARBIRD. Yes, sir, they have. This project, when authorized, that is, the Monkey Run portion of it, was recognized by the Chief of Engineers as being one that had a significant local benefit. The local interests, therefore, were called upon to furnish not only the normal assurances, but also to furnish, either a cash amount of $250,000 or equivalent work. They have chosen to undertake the work and have let the contract therefor. In addition, they were to provide a pumping station—not the one I mentioned earlier—or a mobile pumping plant to take care of the water from Post and Cutler Creeks. They have fully met all of their assurances in a satisfactory manner to keep the construction on schedule.

Mr. RILEY. Several years ago, before I had any idea of being connected with this committee, I was in Corning and was very much intrigued by the local flood problem there. I am glad to know they have solved it.

Mr. DAVIS. I think the committee is very much pleased at the reduced scope of this project. As you know, we have had some misgivings about it in the past and I am glad that you are going to be able to clean it up at a very much lower cost than was originally anticipated.

DILLON RESERVOIR, OHIO

Date	Unobligated balance	Unexpended balance
June 30, 1953	$49,230	$404,097
Dec. 31, 1953	38,810	387,346
June 30, 1954 (estimate)	None	336,300

STATEMENT OF AVERAGE ANNUAL BENEFITS

The project will serve as an essential supplement to the 14 existing reservoirs in the Muskingum River Basin and as a unit in the system of reservoirs for reduction of floods on the Ohio River. The benefits to be obtained will accrue largely along the Muskingum River below the mouth of the Licking River including the towns of Zanesville, McConnelsville, and Marietta, Ohio. Zanesville, with a 1950 population of 40,000, has many varied industries and manufacturing plants. The area below Zanesville includes two large steam electric plants, and expanding chemical and industrial developments. In addition, the project will contribute to the reduction of floods in the highly industrialized Ohio River Valley, providing benefits to cities and towns, industries, valuable farm lands, and railroads and highways. Further benefits will accrue to the project due to allied water uses, including water supply and pollution abatement, as well as conservation and recreation uses. The average annual benefits are estimated at $1,199,000.

Average annual charges: The average annual charges amount to approximately $1,113,000.

Data on continuing contracts	*Total estimated contract earnings*
Description of work:	
Continuing contracts in force	None
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955: (*a*) Railroad relocation, B. & O. RR	$1,803,000

Mr. DAVIS. The next project is Dillon Reservoir, Ohio, where we have a total estimated Federal cost of $27,061,000. The total appropriations to date have been $9,189,800, and we have before us a request for $2 million to resume construction of this project.

Will you bring us up to date on the history of this project?

Colonel STARBIRD. Yes, sir. This project was authorized by the Flood Control Act of 1938 as a part of the overall comprehensive plans for the Ohio and Mississippi River Basins to take care of the disastrous floods such as occurred in 1937.

The actual construction on this project was initiated in 1946; construction was carried on on the project until 1951, when it was suspended as a result of the outbreak of the Korean war.

Mr. DAVIS. You show a benefit-to-cost ratio of 1.08 to 1. Is that what the benefit-cost ratio was at the time it was justified to the authorizing committee?

Colonel STARBIRD. I cannot answer that; I will have to insert that in the record.

(The matter referred to follows:)

The benefit-cost ratio at the time of authorization was 2 to 1.

Mr. DAVIS. It appears that the last time this item was before this committee we had an estimated total cost of $19 million. We now have an estimated total cost of something over $8 million in excess of that. Will you explain that for us, please?

Colonel STARBIRD. Yes, sir. The excess can be explained briefly as being caused by four factors. The first factor was price level increase and I don't think that requires any further explanation.

General CHORPENING. I think it should be stated that price level increase is between June of 1949 and July of 1953. It is not the usual 1-year increase.

Colonel STARBIRD. The second factor has been the development in the area since the time the project was initiated. The third factor has been a change in the spillway design flood.

A few years prior to 1947, an agency was created in the Weather Bureau, supported partly by the Corps of Engineers, to try to get better estimates of the maximum possible rainfall that might occur above the reservoir. This agency completed in late 1947 or 1948 a study of the whole eastern United States. We then related that study to the project and concluded that the spillway design flood in our original design was too low. This conclusion was reached after the last appropriation was made, and it was necessary to increase the spillway design flood.

The fourth factor is a change due to further investigations of the foundation conditions and an analysis thereof made during the latter period of construction.

Would you care to have me break out the figures with respect to the various items of change which have occurred?

Mr. DAVIS. I think we had better have that.

Colonel STARBIRD. The first I mentioned is the price level increase of $5,141,000. The other changes, because they occurred more by feature, I shall not give in the three categories I gave earlier but, rather, as they affect each feature.

With respect to the dam proper, because of more information on foundation conditions and because of the increased spillway design

flood, we flattened the slope somewhat and also raised the elevation of the dam by approximately 3 feet. The added cost involved thereby was $550,000.

The spillway area was found by drilling to have a sandstone material that was not suspected earlier in certain sections, and which could not be used for riprap, and in turn had to be covered by some sort of capping. The increased cost involved there was $221,000.

Because of the increased flatness and height of the dam, it was necessary to extend the outlet tunnel. The increase there was $400,000. Because of the increased elevation and certain more detailed surveys, two dikes were added at a cost of $93,000.

Added clearing in the upper section was necessary at a cost of $95,000.

A gaging system was added to give more reliable data for operation of the dam, at a cost of $91,000.

And we added certain access and parking facilities at a cost of $50,000.

Also, as mentioned in the planning report, there were reservoir management features added at a cost of $16,800, and relief wells at the Nashport dikes at a cost of $6,400.

The lands we were to take, because of the increase of 3 feet in the pool, which as it happens are to be taken largely by easement, were increased at a cost of $415,000.

Relocations, as brought out by the planning report, were increased by $951,700. That was due to the fact that certain subterranean conditions were revealed on the railroad alinement and indicated that a little different treatment of the railroad relocation had to be made. That amounts to $201,700.

With respect to highways, there was added development in the area and the highway department felt that the practice that had been followed earlier in allowing highways only to be raised to a 10-year flood frequency contour would not meet the present day needs. The total increase of highway relocations, due to both causes, was $550,000.

Then there was an increase of utilities in that area to include the use of some old oil and gas wells that had been abandoned prior to the Korean war, but were reactivated during the Korean war. That adds a cost of $200,000.

The last 3 sums I have mentioned made up the $950,000 I mentioned earlier.

Mr. DAVIS. I note that well over $1 million of the total cost of this project is for relocations and another $6 million is for land, which leaves less than one-third of the cost for actual construction. Is not that rather unusual?

Colonel STARBIRD. It is a little unusual; yes, sir. We have a situation here where the railroad is within the reservoir pool. That contributes to the heavy relocation costs. The site, of course, was selected because it would give the maximum effectiveness in this particular valley where added control was felt to be desirable and necessary.

LAND ACQUISITION

Mr. DAVIS. What is the extent of the land acquisition program?

Colonal STARBIRD. The land acquisitions are 17 percent complete.

Mr. DAVIS. Does this figure of over $6 million for lands take into consideration the policy of which you informed us of taking easements instead of fee title?

Colonel STARBIRD. It does not; although, as I mentioned, we do plan to secure easements on certain of the upper lands.

Mr. DAVIS. Can we have some assurance that the total land cost is going to be something less than the $6 million you have indicated here?

General CHORPENING. We hope that it will be less; but at this time I would not be able to say it would be substantially less. Until we are able to determine, as I stated earlier, just what we are going to be able to do under the flowage easement program, as against fee simple, I cannot advise the committee in that regard.

RELOCATION OF RAILROADS

Mr. DAVIS. There have been no sharp differences of opinion with respect to relocations, particularly railroad relocations, have there?

General CHORPENING. I do not know of any differences of opinion, sir, as to those relocations. The work that has been done has mostly been in connection with the Baltimore & Ohio Railroad relocation. I do not know of any difficulties there.

Mr. DAVIS. Have you gone far enough with the negotiations here to make this a firm estimate of the relocation cost?

General CHORPENING. I think the answer is, as you have noticed, we have gone into the new estimate thoroughly here and given you a very considerable breakdown. I am certain, that the same thing has been done in connection with the cost of the railroad relocation.

Colonel STARBIRD. One point in connection with your question. The relocations as a whole are 58 percent complete. The major portion of the cost of the railroad relocations has already been accomplished. We did call for a further review of this estimate and the division and district engineers still feel this is a reliable estimate.

HIGHWAY RELOCATIONS

Mr. DAVIS. What can you tell us about the highway relocations—an item of about $2,500,000, apparently?

Colonel STARBIRD. The highway relocation has only been initiated. I gave you certain increased costs. Those increased costs are reflective of conversations and dealings now being held with the highway department. I feel that the relocation estimate for the highways is reliable as of this moment. It, of course, does not consider future developments that may come in the area, nor the cost of changes in subterranean conditions that may be encountered.

General CHORPENING. I would like to make the comment here in answer to an earlier question of the chairman as to whether the relocation and land costs in this reservoir are not unusual. They are greater than the average; but in the eastern area of the country we do usually encounter higher costs because the country is more developed. I recall Conemaugh Dam, upstream from Pittsburgh, which was completed a few years ago. In connection with that project we had the relocation of the main line of the Pennsylvania Railroad, which on

that one project cost us in the neighborhood of $20 million. So, considering other reservoirs in that general area of the country, it is not too far out of the pattern.

In the West, where you do not encounter quite as many railroads, although they do build them in the valleys, you usually do not have as large costs, of course, and do not have as much real-estate cost.

Mr. DAVIS. There have been indications from time to time of rather strong differences of opinion of people in that area with respect to that project. What can you tell us about that?

General CHORPENING. There have been some differences of opinion about it in years past; the differences being, as is the usual pattern, that the people who are going to be affected by some lands being taken are not for it; those who are downstream and are going to be benefited, desire it.

I have understood from personal conversations that there is a very decided desire for this project now. I would never say that all opposition has disappeared, but I believe there is less opposition now than there has been in the past.

Mr. DAVIS. What have you been doing with the approximately $9 million worth of work that has been done there?

Colonel STARBIRD. The $9 million worth of work is primarily in the completion to subgrade of the major portion of the railroad relocation, the acquisition of lands figure I mentioned earlier, and the completion of a dike, the so-called Nashport dike. We are also engaged in planning and investigation in connection with later contracts.

Mr. DAVIS. Where does that dike show on the map?

Colonel STARBIRD. It does not actually show. You can see where the town of Nashport is on the map. It is a dike at the head of that little inlet there. It is actually what we call a saddle dike. It is a dike to prevent the reservoir from running off in a new direction. I believe that was once considered for a spillway location and we decided that a better design was the one we now have.

Mr. DAVIS. There has been no actual construction of the dam itself, as of this date?

Colonel STARBIRD. There has been no construction of the dam.

Mr. DAVIS. Has there been any substantial cost of maintaining the work that has been done?

Colonel STARBIRD. There has been a little cost of maintenance. There has been some erosion. That erosion, we estimate, is in the neighborhood of $100,000 and is progressing at a rate of $25,000 a year.

We do have constant queries coming from residents of the reservoir area, because thay have been held in a state of suspension in many cases since 1946. That involves overhead costs.

Mr. DAVIS. Just what are we protecting here?

Colonel STARBIRD. This is a part of the overall comprehensive plan for the Ohio River Basin. When recommended, that plan consisted of 80 reservoirs. Of those 80 reservoirs, 32 have been completed and 3 are under construction. So you can see we have not achieved anywhere near full completion of the program.

That program, was approved in the Flood Control Act of 1938 as a result of floods immediately prior thereto. It makes a contribution to the overall flood-control system on the Ohio River.

In addition, it gives a large measure of added protection, because it operates in conjunction with the existing Muskingum dams, to Zanesville, and to 84 miles farther down that river, and to the city of Marietta at the confluence of the Ohio and Muskingum Rivers.

Mr. DAVIS. This 1.08 to 1 benefit-cost ratio applies to this project standing alone?

Colonel STARBIRD. This applies to this project alone but it is a part of the comprehensive plan.

Mr. DAVIS. I note from your planning report that there are 4 separate items listed in paragraph 14 on page 7 of that report that make up the annual benefits of $1,199,000. The major one, of course, is for flood control of $1,100,000. You mentioned a number of cities previously; are they all on Muskingum River which you mentioned?

Colonel STARBIRD. The cities I mentioned, except for Marietta, are on the Muskingum. Marietta is at the confluence of the Ohio and Muskingum Rivers.

SERIOUS FLOOD HAZARD

Mr. DAVIS. Has there been a serious flood hazard in the Muskingum Valley in fairly recent times?

Colonel STARBIRD. Yes, sir. To give you an indication, in Zanesville, in January 1952, there was a flood that caused damage of $304,000. All of that would not have been prevented by this reservoir, but $206,000 would have been prevented.

At Marietta, there were flood damages of $2,350,000; of which $1,150,000 would have been prevented by this reservoir.

In 1950 there were two somewhat smaller floods.

In 1948 there was a flood where the damages at Zanesville were relatively light—$70,000, of which $45,000 would have been prevented. But there was heavy damage in Marietta that year, $6,415,000, and $1,350,000 of that would have been preventable due to this reservoir.

I believe the significance of that would be that the main flood was on the Ohio and that the added contribution by the Muskingum, if you could have controlled it, would have given you a reduction in the overall damages to Marietta to that extent.

Mr. DAVIS. I believe you have 10 or 12 dams in this valley at the present time?

General CHORPENING. There are 14, sir. Much further upstream you have the smaller ones, which give protection to a fairly short area below—complete protection—and then, as other tributaries come in, of course, you lose the value.

CONSERVATION AND PUBLIC USE ITEMS

Mr. DAVIS. What are these conservation and public use items which involve a total of $56,000?

Colonel STARBIRD. The authorizing document on this reservoir, and the report accompanied the Flood Control Act of 1938, both referred to such benefits. With your permission, I would like to quote from one paragraph of the report.

Mr. DAVIS. Very well.

Colonel STARBIRD (reading):

The reservoirs of the plain have been designed primarily for flood control on the Ohio River and its tributaries, but their operation, incidentally, afford a

reduction in the Ohio River's contribution to floods on the Mississippi River. In addition, they have been planned to provide permanent pools which will be of great value for recreation or as possible wildlife preserves, and the reservoirs may be operated to afford a valuable increase in low-water flow on the Ohio, providing a benefit to navigation and improved water supplies, and sanitary conditions, without sacrificing the flood-control storage.

Based upon that, there is planned a conservation pool at this reservoir.

With respect to the particular items which you just mentioned, the conservation and public use items, they refer to the use of that reservoir as a recreation center and to the development therein of fish and wildlife assets.

We estimate, and we believe this is on the conservative side, that because of its proximity to Zanesville and Columbus, in spite of the other reservoirs, this reservoir will receive over 250,000 visitors a year.

As far as water supply and sanitation are concerned, the Muskingum is a river which is heavily polluted, as is the Ohio. The Public Health Service has given quite an extensive study to each and measures have generally been recommended to improve the situation.

This reservoir, under proper control of releases, particularly during low flow periods, would help both the Muskingum and to a lesser degree the Ohio River.

As far as navigation is concerned, there is no navigation channel on the Muskingum River. There was one once, but it is not active at the present time. You can see, therefore, that the navigational benefits are very slight. It is the contribution that that reservoir makes to the area further downstream.

Mr. DAVIS. In your more recent computations of benefits for purposes of arriving at a benefit-cost ratio, have you been as liberal with granting benefits for some of these minor items, such as conservation and public use, water supply, and sanitation, as was the case with respect to this project?

Colonel STARBIRD. We try to make a realistic estimate of those things. Some of them are capable of rather exact computation. For instance, with regard to navigation, you usually can make a fairly exact computation. With respect to water supply and sanitation, the benefits are less easy to estimate, and with respect to conservation, still less easy to estimate.

However, I have confirmed with the division engineer that he believes that the factors used which went into the computation in this case are less than the factors generally used—slightly less, and certainly not more—than the factors used with respect to computation on other structures.

Just as we consider all benefits in computing benefit-cost ratios, so we consider all possible costs and damages, because only by considering both could we come up with a real estimate.

Mr. DAVIS. What do you propose to do with the $2 million?

Colonel STARBIRD. With the $2 million, plus $151,000 carryover, we would undertake the following work:

We would continue the land acquisition at a cost of $174,000. That is to continue the land acquisition, and largely to study, initiate, and get going with the purely hardship cases.

We would continue relocations of $1,877,500, primarily on the railroads, and we would apply $100,000 to continue planning on the dam so that contracts thereon could be let in 1956.

Mr. CEDERBERG. Of the $9 million plus involved in this project, do I understand correctly that all of it has been obligated except $150,000?

Colonel STARBIRD. That is correct.

General CHORPENING. All of the dams on the Muskingum that we built earlier tie in, but very indirectly, as I pointed out. They are smaller dams, and they will have a very good effect in the immediate stream below; but, as you go down, and other tributaries come in, and other unprotected stretches of the river are encountered, they lose their value.

Mr. CEDERBERG. In the event of a large flood, would you not impound a good deal of water that would normally during flood conditions go down that particular river past Zanesville?

Colonel STARBIRD. Yes, sir.

Mr. CEDERBERG. So, even with the particular works that you have in operation at the present time, they have a less benefit for this area?

General CHORPENING. They do, but all of that is taken into consideration. We consider the uncontrolled area of the river below the dams that exist, and how much rainfall and how much runoff you can still get in that uncontrolled area. These smaller dams, up in the headwaters, provide quite a little control up there, but after you have left them, then you still have that expanse of river below, still subject to storms and runoff.

Mr. CEDERBERG. It would be nice if we had sufficient finances in this country to take care of all of the occurrences that may happen from Mother Nature, but I do not think we will ever reach 100-percent perfection. There are going to be some risks involved to the people living along that area. We can do the best we can, but it seems that with the number of reservoirs that you have there, we have gone quite far toward taking care of the situation.

RELOCATION OF BUSINESS ESTABLISHMENTS

Mr. RILEY. Do I understand here that there are other relocations than the railroads, and that you are also having to relocate certain business establishments that were formerly adjacent to the railroad?

Colonel STARBIRD. There are no towns in the area.

Mr. RILEY. I am talking about individuals and businesses.

Colonel STARBIRD. Yes, sir.

Mr. RILEY. It says here, "relocation agreements have been entered into with 18 owners having facilities affected by the Baltimore & Ohio relocation."

Are those people who have facilities where you would have to have a right-of-way for the railroad, or are they establishments that you move to keep them on the railroad property?

Colonel STARBIRD. I believe those are establishments which we moved to get the right-of-way for the railroad.

Mr. RILEY. Are the local interests furnishing you the land here as they do at other locations, or do you have to acquire the land?

Colonel STARBIRD. No, sir; the acquisition of the land for this reservoir falls under the Flood Control Act of 1938, and the Federal Government purchases the land.

Mr. RILEY. The local interest's contribution, then, is more or less minor?

Colonel STARBIRD. They make no contribution to the reservoir, sir. The reservoir, of course, does not benefit the people above the reservoir that live in the pool area at all, and the people below benefit in varying degrees, dependent upon how far downstream they are from the structures.

OKLAHOMA CITY FLOODWAY, OKLA.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$19,170	$540,431
Dec. 31, 1953	898,226	1,442,794
June 30, 1954 (estimated)	214,000	214,000

STATEMENT OF AVERAGE ANNUAL BENEFITS

The project is located on the North Canadian River in the vicinity of Oklahoma City, Okla., and will prevent losses to an estimated 14,000 persons residing in the flood plain and to 4,500 people who are regularly employed in the area. Physical properties located in the urban area have an estimated value of $75 million. The project will provide protection to 7,700 acres of highly developed land within and adjacent to the urban center of Oklahoma City. Additional benefits will be obtained from the project by protecting important railroad terminals serving the city, State highways crossing the flood-plain area, and commercial and industrial properties. Benefits and annual charges are for the four-project system in the North Canadian Valley, consisting of the Oklahoma City Floodway, completed Canton and Fort Supply Reservoirs, and the authorized Optima Reservoir. The benefits are estimated at $3,121,000 consisting of $2,225,000 for flood control, $570,000 for irrigation, and $326,000 for reservoir usage.

Average annual charges: The average annual charges amount to $2,785,000 based on 1953 construction costs.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force: (*a*) Channels and drainage facilities (phase 1)	$1,640,400
Proposed in fiscal year 1954 but not yet in force:	
(*a*) Railroad relocation, Oklahoma City-Ada-Atoka Ry. Co. and Missouri-Kansas-Texas RR Co	695,700
(*b*) Channels and drainage facilities (phase 11)	2,599,600
Proposed in fiscal year 1955:	
(*a*) Railroad relocation, Chicago, Rock Island & Pacific Ry. Co	1,011,800
(*b*) Railroad relocation, St. Louis and San Francisco Ry. Co	1,014,200

Mr. DAVIS. The next project is the Oklahoma City Floodway, and the total estimated Federal cost is $11,162,000. The appropriations to date include $1.5 million for the current fiscal year, and they have a total of $2,680,000.

We have before us a request for $2.1 million for fiscal 1955, which is scheduled to provide a total of 43 percent of the funding for this project.

What is the status of this project at the present time?

Colonel STARBIRD. At the present time the project is under active prosecution. It is being carried forward with funds now available. We have completed a downstream section of the floodway through the city; we have initiated construction on the next section, which is a section approximately two-thirds of the total length of the floodway.

The total length of the floodway, incidentally, is about 13.4 miles, and there are laterals, for a total of 6.4 miles. We have negotiated

with the railroads for the necessary relocations involved. In some cases those negotiations are still under way, and in some cases they have been substantially completed.

Mr. DAVIS. Will you distinguish between phase 1 and phase 2 of this project?

Colonel STARBIRD. Phase 1 is substantially that part on your justification map covered by green and black—and it ends at about Foundry Avenue.

Mr. DAVIS. What about the second phase?

Colonel STARBIRD. Phase 2 runs up, roughly, to the Atchison, Topeka & Santa Fe crossing, or Robinson Avenue; and phase 3 is the remaining section of the improvement.

Mr. DAVIS. Is there any real distinction among these three phases?

Colonel STARBIRD. No, sir. They are divisions for construction purposes rather than divisions due to topographical features.

Mr. DAVIS. Will you summarize the status of those three separate phases for us briefly?

Colonel STARBIRD. Phase 1 is under way, and partially complete. The completed section totals approximately 52 percent of phase 1. Phase 2 will be started in 1954 and would be continued in fiscal year 1955, with the funds requested. Construction of phase 3 would occur in later years.

Mr. DAVIS. You have increased the cost estimate of the project by $500,000 since last year. What is the basis of that?

Colonel STARBIRD. The increase is slightly in excess of a half million dollars, and we have run a recomputation since the preparation of those sheets. The actual increase in the cost is the same as the increase in the cost shown on your planning report of $702,000. Increased cost of relocations is $965,000. This increase is partially offset by savings due to favorable bids in the amount of $263,000, giving the net increase of $702,000.

We have, as I mentioned, engaged in negotiations with the railroads to determine what constituted the necessary replacements of their structures.

There are three railroads concerned. Our cost estimates up to the time that those negotiations were carried through the current state—in other words, to this fiscal year—were largely based on the survey report, and not as the result of detailed planning.

Working from downstream up, the first bridge is a bridge of the Chicago, Rock Island, & Pacific Railroad. Exclusive of costs with the price level increase, which I have summarized earlier, the increase necessary because of structural design on that bridge is $492,000. We originally assumed that those two bridges that are parellel to each other—the Chicago, Rock Island, & Pacific, and the Oklahoma City-Ada-Atoka, could use on eanother's tracks during the period of construction. That has proven to be unsatisfactory for the reason that one of them uses 70-pound rail, and the other uses 115-pound rail, and that one of the railroads is a high-speed, heavy-traffic, transcontinental route, which is the Rock Island. Therefore, we are forced to put in what is called shoo-flies, to replace the structures during the period of the construction of the bridge.

We have investigated, but have found we could not put in a permanent structure at a different site because we did not have the room—that is, two permanent structures at different sites. The $492,000 is

caused in a large measure by that separate shoo-fly. It is also caused by a situation found in the abutment. We will have to put in added reinforcement, because our investigation there revealed that the abutment situation was not as good as had been expected.

We have, however, been able to shorten the bridge, somewhat, from about 1,100 feet to 800 feet. On the hand, we do have to put in a ballasted track on the longer approaches and on the bridge, because of the length of the bridge.

Overall the net increase is $492,000.

The other parallel railroad there is the Oklahoma City-Ada-Atoka. The foundation conditions encountered plus the need for a separate shoo-fly increases the cost by $152,000.

On the St. Louis & Santa Fe, the third major crossing which appears on your map between Robinson Street and Byers Street, we have a situation where the railroad crosses the stream, but then ducks under a highway; we originally planned a certain type of girder under that highway. However, it has been found that it will not give adequate clearance. Therefore, if we are going to raise the bridge and maintain a satisfactory grade, it has been necessary to change the type of girder, which, in turn, requires an added pier. The net increase due to that is $286,000. Those are the main ones. There have been certain other minor changes, where the railroad crosses one of our laterals, with an increase of $24,200 due to increased size of that lateral. There is no change in the railroad design.

Mr. DAVIS. What is a shoo-fly?

Colonel STARBOARD. A shoo-fly is a bypass track where you pull the line out and take it over a temporary track, in this case a temporary bridge. These contracts, as you may have noted, will not be accomplished in a short period of time. They cannot be. It will take approximately 3 years, during which time the railroads will be forced to operate over the shoo-flies. And I understand that the integration of a railroad system, one with the other, is difficult.

Mr. DAVIS. It seems that someone missed the boat in your local detailed planning hereon this project; did they not?

Colonel STARBOARD. It was not as accurate as we wish it had been, sir.

General CHORPENING. The answer is that we cannot succeed in getting it as precise as we certainly would like to.

Mr. DAVIS. You have given us the benefit-to-cost ratio of 1.12 for the entire system, including several projects.

Can you separate the benefit-cost ratio for the floodway itself?

Colonel STARBIRD. We do not have a separate benefit-cost ratio for the floodway. I will not say that it is impossible to compute, but in order to compute it, you have to make a lot of assumptions. Where you have a unit that is dependent upon another project for full effectiveness, we usually compute comprehensive benefit-cost ratios.

General CHORPENING. I might mention that here in this overall system, the Canton Dam is completed, and has been quite effective in several floods. Last year, during the drought, on the application of the State of Oklahoma, we released practically all of the conservation pool to augment the water supply of Oklahoma City, which was in dire need of water at that time.

Mr. DAVIS. I believe you have completed the Canton Reservoir, and the Fort Supply Reservoir, and they are upstream from Oklahoma City; are they not?

General CHORPENING. Canton is on the North Canadian River, and Fort Supply is on the tributary of the North Canadian River.

Mr. DAVIS. Where is this Optima Reservoir?

General CHORPENING. It is also on the North Canadian, out in the far Panhandle of Oklahoma.

LOCAL CONTRIBUTION

Mr. DAVIS. What kind of local contribution are you receiving here?

Colonel STARBIRD. We are receiving a very large local contribution, in terms of the normal assurances. The local interests costs are estimated at over $7 million, exclusive of maintenance and operation.

General CHORPENING. I have not taken any recent check on the matter, but I know up until the last time I did, I found from my own personal experience that the local interests there had been most aggressive and vigorous in carrying out their part of these local contributions, even though they are contributing here, as has been testified, more than many of these local protection projects—over $7 million.

Mr. DAVIS. We have five railroads running through this area, and your justifications indicate that all of them go through the flood-plain area. It appears that Uncle Sam is picking up the check for the complete relocation in order to get them out of the flood-plain area.

Are we receiving any offset by virtue of that benefit to them?

General CHORPENING. No, sir; under the law, the relocation cost of the railroads are a part of the Federal expenditures.

Mr. DAVIS. Have you completed your negotiations with the railroads involved here?

Colonel STARBIRD. We have not completed them, sir. With respect to the first railroad, and again working in the same order along the river, we have reached a basic agreement which has recently come in for review by us.

With respect to the Oklahoma City, Ada & Atoka, the negotiations are complete, a draft contract has been directed, and it is expected to be under review by us by April 1.

With respect to this St. Louis-Santa Fe Railroad, the same situation applies, except the date expected in the Office of the Chief of Engineers is May 1.

Mr. DAVIS. What about the Rock Island?

Colonel STARBIRD. The Rock Island was the first one I mentioned. That is the one where the agreement is in, and is being reviewed.

Mr. DAVIS. How much of the total cost of this project involves railroad relocation, and the temporary structures that are necessary for the railroads to keep going during the construction period?

Colonel STARBIRD. The total estimated cost of the railroad relocations, including the temporary structures, is $3,135,300. The total cost of the project under the current estimate is $11,162,000.

General CHORPENING. About 28 percent of the total Federal cost.

Mr. DAVIS. Are you authorized to condemn a section of railroad?

General CHORPENING. I do not know what the authority is in connection with a local protection project. I know that on our reservoir projects we are so authorized and we do condemn where necessary. I do not recall any condemnation proceedings that we have ever had in a local protection project. I would like to look into that a little more, and answer the question for the record.

(The information is as follows:)

The Federal Government has authority to condemn a section of railroad where necessary to the accomplishment of an authorized navigation or flood-control improvement. The power exists whether the project be a local protection or a reservoir.

Mr. DAVIS. It gets to be a very serious matter in a project of this kind, where so large a portion of the cost does involve railroad relocations, that the Federal Government should be expected to pick up the entire cost of such relocations, and the railroads end up with their being protected against floods where they had no such benefit before, and they are expected to make no financial contribution whatsoever.

Mr. CEDERBERG. It always amazes me, as we go into these various projects, why the industries and railroads and residents located in these flood-plain areas have never taken the time or seem to be concerned with the threat of floods that will eventually affect them. They go right down into these areas, and then expect Uncle Sam to bail them out.

I think it is a good idea that the average citizen of the United States does not realize what is going on in some of these particular areas, because if he did, he would howl plenty.

I do not have very much sympathy for some of these situations. I suppose that is putting it just a little too bluntly, but I feel if they go into these areas they ought to be expected to bear some of the cost of taking care of the problems which they know are going to exist eventually.

As I said before, that is a part of the flood control act, and the Corps of Engineers is carrying out its duty in the matter. Certainly there is a field here that ought to be reexamined. It is going on today in spite of the fact that we have flood-control projects in a given area. We will find people who will move right into the flood plain and later on expect relief with Federal money.

I do not think it is even consistent with commonsense.

Mr. RABAUT. What is the population of the area?

Colonel STARBIRD. In the actual flood-plain area, sir, there are 14,000 residents, and there are about 4,500 workers. The property value of the flood plain is estimated at $75 million, and there are 7,700 acres therein.

Mr. RABAUT. There was a flood there some time ago, and what would be the estimated loss if you had a similar flood there now?

Colonel STARBIRD. The 1923 flood is probably the one that you remember, sir. The loss, if it recurred now, would be well over $5 million.

Mr. RABAUT. I see here by the justifications that the Oklahoma Chamber of Commerce is advising how many industries are within the flood-plain area, which are engaged in the manufacture of defense material and have a potential output of $1,450,000.

I hope that the engineers are making a study of the question which was put to them by the chairman about the possibility of doing something about these railroads. There is so much money involved in this case that it always seems like the tail wags the dog.

I note here by the map the breakdown into the three phases of the work and the relationship of the project to some other project to bring about the cost-benefit ratio.

Is that customary to tie 2 or 3 of them together to arrive at the cost-benefit ratio, or are you laboring to do it in this case?

Colonel STARBIRD. It is customary to do it, sir. They are interlocking and you are building the downstream protection dependent upon the upstream control. It is, as I mentioned earlier, necessary to make a lot of assumptions if you try to break those out, and say this part belongs here, and this part belongs here.

Mr. RABAUT. Is that mode of procedure and estimation usually carried out where there are related projects?

Colonel STARBIRD. Where they are so closely related, yes, sir.

Mr. RILEY. Colonel, will the work here which is proposed to be performed by the funds requested be an entity which will not suffer erosion or depreciation by waiting for the additional work which is contemplated?

Colonel STARBIRD. I do not think it will suffer erosion, sir.

Mr. RILEY. In other words, is it practical and feasible to carry on this project section by section, as has been done here?

Colonel STARBIRD. It is a single unit, sir. Some benefit is realized, as we get a section downstream completed. However, full realization of benefit and, in fact, the higher percentage return, comes when you are near completion of the project.

Mr. RILEY. I realize that, but will the work which you have done, and are doing, suffer depreciation, or erosion, as a result of waiting to do the further work upstream?

Colonel STARBIRD. No, sir; if the work proceeds essentially, as we have scheduled it, it will not cause any erosion or damage in the lower reaches that are protected.

General CHORPENING. May I say something in connection with the matters we were discussing on Oklahoma City?

Mr. DAVIS. Yes, sir.

General CHORPENING. In connection with the overall proposition of the amount of local cooperation, as we have stated before, we have considered that, and have made a report on it to the Bureau of the Budget.

It is true, as has been brought out by the members of the committee, and as it stands now, the Federal Government does carry these railroad relocation costs. I think, however, that there is this to be kept in mind, that in the development of the Nation and the opening up of the West, it was natural that the railroads would follow the water courses and valleys, because it offered the cheapest construction at that time. Otherwise, it would probably not have been possible to build some of them, and we would not have had that development.

Whether carrying that on and what has to be done should be a completely Federal charge, is something that the Congress passed on, and here again, it is something that we look to you gentlemen to indicate. I think there is bound to be some merit, quite a bit of merit, otherwise the decisions would not have been made that way in the past.

AMAZON CREEK, OREG.

Mr. DAVIS. Before we proceed with the Willamette River Basin in Oregon, I want to comment on the project at Amazon Creek in Oregon. I personally walked along that creek at Eugene this last

fall, and it confirmed the judgment of this subcommittee in its initial action last year that we should not have appropriated any funds for the project until they indicated some desire to clean out the willows and the grass and the things that accumulate there. That in itself would have alleviated a great deal of water from the flood hazard.

WILLAMETTE RIVER BANK PROTECTION, OREG.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$13,345	$167,385
Dec. 31, 1953	61,817	73,121
June 30, 1954 (estimated)	None	None

STATEMENT OF AVERAGE ANNUAL BENEFITS

The project will prevent bank erosion along the lower reaches of 8 tributaries and at certain critical locations along the Willamette River in a 130-mile stretch of the main stem between Eugene and the mouth of the Yamhill River. Benefits of the project will accrue from the protection against flooding of valuable farmland, highways, bridges, public and private improvements. The estimated average annual benefits, all flood control, are $840,200.

Average annual charges: The average annual charges, based on 1953 construction costs, are estimated at $512,000.

Description of work:	*Data on continuing contracts* *Total estimated contract earnings*
Continuing contracts in force	None
Proposed in fiscal year 1954 but not yet in force:	
(*a*) Bank stabilization—Half Moon Bend location	$18,000
(*b*) Bank stabilization—Morriss location	65,000
Proposed in fiscal year 1955	None

Mr. RILEY. The next project to be considered is the Willamette River Basin bank protection in Oregon.

Leading up to this bank stabilization, when you get these reservoirs and dams completed, whether they are multiple purpose or just plain reservoirs, will that not alleviate the flood erosion on these banks below the dams, by regulating the water, and so on?

Colonel STARBIRD. Yes; the reservoirs that are authorized for construction and are under construction will alleviate the situation; it will not eliminate it, and might increase the problem immediately downstream from the dam. There are certain other structures also that have been considered in the past, such as levees in certain locations.

Mr. RILEY. Is it sound and practical, in your opinion, to put in this bank protection and the channel improvements at locations before the dams are completed?

Colonel STARBIRD. Yes, it is sound. The soundness, I think, is attested to by the benefit-cost ratio, which is 1.64 to 1. There is nothing in the dam to be constructed that is going to hurt the bank protection.

Mr. RILEY. The thought occurred to me that there might be a little less work on bank protection after the dam is completed.

Colonel STARBIRD. That is true in the downstream reaches of the river, but more protection might be needed below the dams.

Mr. RILEY. Coming to this project which we have before us, there is a total estimated Federal cost of $10,701,600. The appropriations

to date have been $5,402,400, and the request for 1955 fiscal year is $300,000.

This is a continuing project. This $300,000 will take care of a section which is within itself, or stand within itself so far as any erosion on the part of the river in that particular location is concerned.

Colonel STARBIRD. The funds requested will actually carry to completion work initiated on one unit on the Willamette; it will initiate one section on the Willamette for completion in the next fiscal year; and provide for the completion of two additional locations.

In addition, on the McKenzie River it will complete one unit undertaken with 1954 funds, and on the Santiam it will continue to completion one unit.

Mr. RILEY. It carries these units to a complete project, within itself, so they are not dependent on any other work being done at some future time, somewhere else?

Colonel STARBIRD. There is a possibility, sir, that changes in the river regimen might well cause, in some cases, the necessity to add to the improvement at any one location. I might mention, sir, that the 1950 authorization covered a great many locations. However, that act also recognized that there might be a great deal of flexibility required in that region, due to any changes in the river, necessitating the modification of those locations. The answer to your question, for the moment, is that it completes the unit for each of those locations.

Mr. RILEY. Do you think that the completion of the units that you have proposed here is a good economical venture on the part of the Government?

Colonel STARBIRD. That is correct. In further answer to your question I would like to mention that we named two locations being those that will be initiated with the 1955 funds, and completed. And another location here we will initiate for later completion.

These are the locations that most need the work right now. It is possible that by the end of the next flood season there will be a change in the actual locations that are most urgent.

Mr. RILEY. Is this one of the rivers upon which they float logs down?

General ITSCHNER. Yes, they do run logs down this river.

Mr. RILEY. Is there any provision in the Lookout Dam for bypassing the log rafts?

General ITSCHNER. No, there is no provision in the Lookout Point Dam for passing logs. There has been no appreciable amount of logs floated down the river in their natural state past the Lookout Dam site.

Mr. RABAUT. Do these logging rafts cause any damage to the banks as they come down?

General ITSCHNER. They might in certain cases, but the amount of damage caused by logging rafts is very minor. As a rule they do not hit the bank.

Mr. RILEY. This work has been going on for some time and is authorized in various and sundry acts dating back some years: is that correct?

Colonel STARBIRD. That is correct. There are three different authorizing acts.

General ITSCHNER. One is the act of 1936; another the act of 1938, and the last act was 1950.

Mr. RILEY. They keep adding projects?

General ITSCHNER. That is correct; and providing authority.

PROGRESS OF PROJECT

Mr. RILEY. Do you have an overall set up planned and specifications for the entire project, or is it just being done on a sort of piecemeal proposition?

General ITSCHNER. We do have all of the locations established at which we feel work must be done some time in the future. We have designated those locations in order of priority, and the first increment includes problems that we propose to remedy in the next few years. However, as floods occur we may find it necessary to change that order of priority, so as to prosecute the most urgent locations first.

Mr. RILEY. Is this considered a local project?

General ITSCHNER. It is a local project, yes.

Mr. RILEY. Are there any contributions being made by the local interests?

Colonel STARBIRD. Yes, there are. They furnish the normal land requirements, rights-of-way, protection against damage, and the maintenance and operation of the 1950 portion of the act.

The estimated cost to them in connection with the construction of the project amounts to $220,000. Their maintenance cost in the past has been in the neighborhood of $3,200 per year.

Mr. RILEY. All maintenance costs have been borne by the Federal Government, and have to be, after completion, or is that a part of the local cooperation on the project?

Colonel STARBIRD. The portion that was completed under the 1936 act, as modified by the 1938 act, was, up through this year, being maintained by the Federal Government. We have notified the local interests concerned that we have been informed by this committee that there will be no funds for that maintenance by the Federal Government during future years.

Mr. RILEY. There will be no funds under any of these acts for the actual maintenance or the continued maintenance work which was done under the 1936 and 1938 acts?

General CHORPENING. Under the work authorized, the 1950 act requires that the local interests maintain that work.

The prior acts of 1936 and 1938 did not require maintenance to be performed by local interests. You will recall that it was decided by the committee that after the fiscal year 1954 there would be no appropriation of any further funds for maintenance of the local protection projects authorized in those acts. Accordingly, we have notified the local interests that after this year they should not expect any Federal maintenance funds for this project.

Mr. RILEY. I notice there has been some increase in this estimated cost of the project, of some $150,000. Would you explain that to us, Colonel?

Colonel STARBIRD. Yes. There is a slight change, due to damage last year changing the extent of the work which has to be done.

In addition, in that $150,000, is the price-level increase.

Mr. RILEY. When was this work scheduled to be completed in its entirety? I notice you expect approximately $5 million additional appropriations.

Colonel STARBIRD. In 1961.

Mr. DAVIS. I think that you have hit upon a very important point when you indicated that it appeared here that this has continued to be done on pretty much of a piecemeal basis. We have been told, and advised by the Corps of Engineers, with respect to the Missouri River, for instance, that the ordinary and professional way to do this kind of work for bank stabilization is to work upstream and bring the river under control as you work upstream. Apparently, that has not been followed so far as Willamette River is concerned.

General ITSCHNER. That is correct. It would have been, but it has not, because of the lack of funds to take care of the more urgent conditions, at various points along the river. Had we had sufficient funds we would have preferred very much to do it in an orderly fashion; and if we could have had appropriated sufficient funds to take care of the emergency conditions, any additional funds appropriated would be used to prosecute this work in an orderly fashion.

Mr. DAVIS. Is that the answer? In failing to prosecute it in an orderly fashion, in effect you may be taking 2 steps forward and 1 step backward because you lose a considerable amount on the emergency work by the time you have begun the stabilization projects; do you not?

General ITSCHNER. Actually in this case we do not lose any work that has been accomplished. Each job that has been completed has been done in such a way that it will fit into the overall plan. We have not lost any of the work that has been done so far.

Mr. DAVIS. This is not as turbulent a river as the Missouri?

General ITSCHNER. That is correct; and there is another factor involved, in that this river does not have the cutoff tendency that exists in the Missouri River. On this river we do not use pile dikes, which are designed to effect sedimentation, thus stabilizing the bank. In connection with the bank stabilization for this project, we use rock to revet the banks and that rock remains in place and will fit into the overall program.

Mr. DAVIS. You do not suffer any loss in the stabilization work in the course of your efforts on this river?

General ITSCHNER. No; we have not and do not anticipate any appreciable amount of such losses in the future.

JOHNSONBURG, PA.

No construction funds available.

STATEMENT OF AVERAGE ANNUAL BENEFITS

This project will provide flood-protection benefits for the west Johnsonburg and Rolfe areas of the community lying along the west branch of the Clarion River in Elk County, Pa. Johnsonburg is the main business and manufacturing center of the surrounding area. Its principal industry is the manufacture of paper. The Rolfe area is principally a residential section and most of its population is affected either directly or indirectly by floods. Dwellings, public buildings, and a number of commercial, industrial, and transportation facilities are located in the flood area. This project will prevent future disruptions to business and industry in the area and recurrence of large flood losses to the community. The average annual benefits are estimated to be $80,600.

Average annual charges: Estimated current average annual charges are $44,300.

Data on continuing contracts Description of work:	Total estimated contract earnings
1. Continuing contracts in force	None
2. Proposed in fiscal year 1954 but not yet in force	None
3. Proposed in fiscal year 1955: (*a*) Channel, levee embankment, floodwall, pumping plant and drainage facilities—west Johnsonburg area	$290,900

Mr. DAVIS. The first project we will take up this afternoon is Johnsonburg, Pa., having a total estimated Federal cost of $778,000; appropriations to date, including $20,000 in the current fiscal year, are $53,900, obviously for planning purposes.

We have before us a request for $300,000, undoubtedly to initiate construction of this project. This is the first time funds have been requested for construction; so will you give us a brief statement on the history of the project?

Colonel STARBIRD. Yes, sir. The project was authorized by the Flood Control Act of 1944 without a project document. It is a project for channel clearing and for levees in the city of Johnsonburg, Pa., on the Clarion River, a tributary of the Allegheny River.

The project consists really of three elements as shown on the map. There is element 1, called unit 1, which is a levee-wall section designed to protect west Johnsonburg. There is an element, unit 2, which is the channel improvement of about a little over a mile on the west branch of the Clarion. That unit will give added protection to the Johnsonburg area. The work on unit 3 is the improvement of Silver Creek, which will give protection to the Rolfe area.

The project has a high benefit-cost ratio of 1.82 to 1. It is a unit of low cost. It can be completed in 2 years.

The plans are ready for the first section, the section shown in red, unit 1. Unit 1 is independent of either unit 2 or unit 3.

The plan as presented here represents a change in the plan from that last presented to the committee. The primary change is that instead of having the Rolfe area protected by a low levee, we have further increased the capacity of Silver Creek and provided for channel improvement of the west branch.

There has been an increase in Federal and local costs caused thereby. The local interests have given assurances they will furnish the lands, rights-of-way, protection against damages, and so forth, for unit 1; also they will furnish them for unit 3.

There is a question of a bridge relocation between unit 3 and unit 1 that is still under negotiation. The negotiations have not been going on for a long time. The change in plan has only recently been approved. It was approved as a result of planning developed with the planning funds that were appropriated.

The local contribution will be relatively high on this project. It is estimated it will cost the local interests $336,600 overall, including the cost of replacement of the bridge I just mentioned.

Mr. DAVIS. What is the significance of your statement that it was authorized without a document?

Colonel STARBIRD. It was authorized without specifying a particular document in the Flood Control Act. It stated "to give protection to the town of Johnsonburg." Usually projects are authorized

"pursuant to recommendations contained in such and such a document."

Mr. DAVIS. At the time of the authorization, I note your estimate in 1944 was only $213,000.

Colonel STARBIRD. That is correct. At that time we contemplated a plan which would provide protection by levees, and the degree of protection that would be given the entire area was only 20 percent above the maximum flood of record. We do not like that degree of protection if we can avoid it with levee structures. As a result of the detailed planning, and particularly as a result of the fact it looks now as though local assurances are going to be available for the entire project at about the same time, it appears that we can get a better plan by this channel-improvement plan. The channel-improvement plan that has been substituted for the original plan that I mentioned, upon which the original cost estimate was based, will give us an added 3 feet of protection in that red levee and wall line, unit 1; in other words, 3 feet of protection above that which was contemplated; furthermore, it will avoid giving the Rolfe area, which will still have only 20 percent protection above the highest flood of record, protection by a levee. It will be by channel improvement.

Mr. DAVIS. This $300,000 will complete the West Johnsonburg protection and do some work in connection with the other units; is that right?

Colonel STARBIRD. No, sir; it does not quite complete that unit. Expenditures from the funds available in 1955 will be used also for planning on the other units.

I might mention, too, this increase in Federal cost was accompanied by increased local cost. Their costs go up from about $65,000, as I remember it, to something over $300,000.

Mr. DAVIS. Are there any related projects?

Colonel STARBIRD. There is one related project. There has been a reservoir completed on the east branch of the Clarion which is upstream of the city, a distance of around 14 miles. That reservoir gives protection to the lower end of the city on the east bank of the west branch. These two structures do not duplicate each other, they are complimentary.

Mr. DAVIS. What is the big advantage of the revised method you are using with respect to this Rolfe area that justifies an increased cost of $180,000?

Colonel STARBIRD. The increased protection to the Rolfe area is not an increase in degree; it is occasioned by the desire to eliminate the levee and provide the limited protection by other means. In that way you will eliminate the tendency of people to stay behind the levee with a false sense of security should you have a major flood, and as a result, the possibility of loss of life and more damage than had the area been evacuated. However, the primary advantage comes in the West Johnsonburg area, where the effect is that you can take care of a bigger flood by this improvement. As I mentioned, the original plan gave protection against a flood only 20 percent higher than the highest flood of record.

Mr. DAVIS. You feel your negotiations with the city have gone to a point where you can safely proceed with some of these highway relocations, and so forth, without finding yourself faced with increased cost at some time in the future?

Colonel STARBIRD. As far as the increased cost, they will have to take care of the highway relocation, but we have not yet reached agreement with the highway department on that bridge, primarily because we have only recently approved the design making that change of plan and negotiations have just started. We believe they will be satisfactorily resolved.

However, should they not be, should assurances not be forthcoming in the immediate future, you will note the unit we are to build with the first funds recommended for appropriation is one that is complete in itself, and will give the same protection as originally contemplated to the West Johnsonburg area.

Mr. DAVIS. We are getting a completely usable facility, then, with the initial appropriation, are we?

Colonel STARBIRD. With the initial appropriation, plus, a small amount of $26,000 more in the next year.

BENEFIT-TO-COST RATIO

Mr. DAVIS. You have a benefit-to-cost ratio of 1.82 to 1 here now. Do you remember what it was as originally designed?

General CHORPENING. There was not any document originally. I don't recall whether we had a benefit-to-cost ratio on it at that time.

Mr. DAVIS. According to the information wnich we had in last year's hearings in connection with the appropriation for planning, the project with an estimated Federal cost of $583,000, had a benefit-to-cost ratio of 3.06.

Colonel STARBIRD. It had at that time a benefit ratio of 3.06, but the Federal cost at that time was $583,000; the local cost was $65,000—or a total cost of $648,000. The total cost at the present time is $778,000, plus $336,000 local cost, or an increased cost from $648,000 overall to $1,214,000. In other words, you have almost doubled your cost which, if no added benefits came in, would halve the figure that you had last year.

Mr. DAVIS. If that is a sound computation, then we have doubled the cost of it without increasing the benefits proportionately. Is not that true?

Colonel STARBIRD. We have not increased the benefits proportionately. However, we have given an added degree of protection that we feel is essential to both unit 1 and unit 3.

General CHORPENING. And still have a very favorable benefit to-cost ratio for the project.

SWOYERSVILLE-FORTY FORT, PA.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$150,082	$818,148
Dec. 31, 1953	435,619	856,573
June 30, 1954 (estimated)	None	253,300

STATEMENT OF BENEFITS

The project, when completed, will provide substantial protection for the boroughs of Swoyersville, Forty Fort, and portions of Wyoming, west Wyoming, and Exeter, and in addition, will supplement and prevent floodwaters from outflanking the existing levee at Kingston and Edwardsville. These communities

are in the heart of the anthracite region and contain highly productive coal mines. The Wilkes-Barre Wyoming Valley Airport, lies within the area to be protected. Also receiving protection would be United States Highway No. 11, a main arterial route extending from the Canadian border near Montreal to New Orleans, and railroad lines that pass through these communities.

Average annual benefits and charges: The Swoyersville-Forty Fort project considered as an independent unit has a favorable benefit-cost ratio; when considered in conjunction with the Kingston-Edwardsville project, it has an even higher ratio of benefits to costs. The annual charges for the combined projects at 1953 price level are $470,500; and average annual benefits creditable to these projects under conditions that will prevail after construction of authorized upstream reservoirs are $2,050,700.

Data on continuing contracts	*Total estimated contract earnings*
Description of work:	
Continuing contracts in force: (*a*) Levee embankment, seepage control and drainage facilities (levee unit No. 1)	$868,000
Proposed in fiscal year 1954 but not yet in force: (*a*) Channel, levee embankment, seepage control, closure structure, and drainage facilities (levee unit No. 2)	886,000
Proposed in fiscal year 1955	None

Mr. DAVIS. The next project is Swoyersville-Forty Fort, Pa., where we have a total estimated Federal cost of $4,328,000; appropriations to date, including $400,000 in the current fiscal year, have totaled $1,395,000.

We have before us a request of $400,000 for the fiscal year 1955. I believe this is a project in which the initial appropriation was in the 1953 fiscal year, but you really did not get around to construction until the current fiscal year. Substantially, is that correct?

Colonel STARBIRD. It is substantially correct.

Mr. DAVIS. What have you accomplished thus far and what do you propose to accomplish with the $400,000?

Colonel STARBIRD. Thus far, we have initiated work on section 1 and will initiate, shortly, work on section 2 of the levee.

To show you where that is on the map—along the Susquehanna River and paralleling the river there is a green and red section of levee. If you divide the levee at the point of the right angle, that to the left, or paralleling the river, is section 1; that to the right or perpendicular to the river, is section 2. In other words, we have initiated section 1 and will initiate section 2 with the fiscal year 1954 funds.

With the funds requested in fiscal year 1955, together with the carryover, we will complete levee unit 1, the unit paralleling the river; we will continue No. 2; we shall continue the drains in Nos. 1 and 2; and continue channel work paralleling levee 1—in the diversion canal.

The amounts are as follows: We will complete levee 1 and continue construction of levee 2 at a cost of $404,200; we shall continue the drains for the 2 sections at a cost of $27,000; we will continue the bank stabilization for $5,000; and will continue the channels paralleling levee section 2 at a cost of $217,100.

Mr. DAVIS. The remarkably good benefit-to-cost ratio of 4.08 presented last year has been increased to 4.36 in the justifications this year and the total cost remains the same, which indicates your estimate of benefits to be derived have improved somewhat over last year.

Colonel STARBIRD. Somewhat.

Mr. DAVIS. Last year we were told of the subsidence formerly of a substantial mining area. Has that situation developed as you had

anticipated, so that you are going to get the full protection from the project as you had designed it and are constructing it?

Colonel STARBIRD. About as expected. This project will still give protection to the area downstream because of this subsidence condition.

Mr. DAVIS. That did cause you some planning difficulties, but you have been able to move along in good shape since you have actually gotten construction under way, have you?

Colonel STARBIRD. The particular unit involved is not scheduled for immediate construction. You can see we are completing another part of the protection. You actually have to come all the way down along the river and along what is called the subsidence unit. That is the lower end of it. I do not know whether final plans have been worked out on that section.

Mr. DAVIS. Is that down by the bend indicated there in brown at the left of the map?

Colonel STARBIRD. Yes, sir.

WILLIAMSPORT, PA.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$384,366	$1,150,637
Dec. 31, 1953	1,045,358	1,426,795
June 30, 1954 (estimate)	None	825,200

STATEMENT OF AVERAGE ANNUAL BENEFITS

The project will provide flood protection to the city of Williamsport and the borough of South Williamsport, an area with a population in excess of 51,000, against Susquehanna River and Lycoming Creek floods. The area is an important industrial, commercial, and marketing center. The Newberry section, construction of which is now under way, is the only remaining unprotected area and contains many important industrial installations and the largest railroad yards in this area, handling a daily average of 1,300 cars. The average annual benefits are estimated at $1,664,000, all for flood control.

Average annual charges: The average annual charges based on the present estimate of cost are $652,000.

Data on continuing contracts	*Total estimated contract earnings*
Description of work:	
Continuing contracts in force	None
Proposed in fiscal year 1954 but not yet in force:	
(*a*) Railroad and utility relocations, levee embankment, seepage control measures, closure and floodwall structure, drainage facilities (L. U. 4B)	$734,000
(*b*) Levee embankment, seepage control measures, floodwall structure and drainage facilities (L. U. 4C)	310,000
(*c*) Pumping plant (L. U. 4A and 4B) and L. U. 1 gated outlets	672,000
Proposed in fiscal year 1955	None

Mr. CEDERBERG. The next project is a local protection project at Williamsport, Pa., having a total estimated Federal cost of $14 million. The total appropriations to date are $12,337,200 and the request for fiscal 1955 pending before us now is $700,000, leaving a balance to complete of $1,062,800.

Colonel, would you advise us as to what you intend to do with the $700,000 requested in this fiscal year?

Colonel STARBIRD. Looking again at the map, the protection for the south bank of the river has been largely completed, as has the protection for what is termed there "section 1," on the north bank.

The work underway now is on section 2. Section 2 is the area below both Lycoming Creek and on the north bank. On that section, we have initiated work that is shown in green insofar as the levee is concerned. With the funds requested, plus the carryover, we would continue relocations at $57,800, both the levee ramps and the Pennsylvania Railroad relocation; we would continue the channel work on Bottle Run. Bottle Run is that small channel draining into Lycoming Creek in the north edge of the project. We would continue the levee units 4 and 5 that have been initiated. You can see levee units 4 and 5 also shown on the map right under the designation "section 2." We would continue the wall unit in reach 4, and continue the pumps and drains in 4 and 5.

The amounts concerned are: To continue relocations, $57,800; to continue channel work on Bottle Run, $92,000; to continue levee units 4 and 5, $676,800; to continue the wall portion of section 4, $70,600; and to continue the pump and drains in 4 and 5, $628,000.

We are trying to complete this project in fiscal year 1956.

Mr. CEDERBERG. What is the amount of carryover?

Colonel STARBIRD. The amount of carryover is $825,200.

Mr. CEDERBERG. Leaving you $1.5 million, approximately.

Colonel STARBIRD. That is correct, sir.

Mr. CEDERBERG. In other words, you will have more left at the end of the fiscal year than you are requesting for the coming fiscal year?

Colonel STARBIRD. That is correct. But we will need another $1 million to complete in 1956. I just checked with the field. They consider they can expend the whole amount appropriated in 1955, and require that amount to keep going at a reasonable schedule.

Mr. CEDERBERG. I note there has been a net decrease in the overall cost of the project of some $400,000; but if it had not been for the increase in the amount of $207,000 for the increased pumping capacity, the cost decrease would have been greater in that amount.

Colonel STARBIRD. That is correct.

Mr. CEDERBERG. Will you elaborate on that, give the reasons for it, and so forth?

Colonel STARBIRD. Yes, sir. We extended a portion of the Bottle Run protection works by a decision about a year ago. As a result of that, there is certain drainage into the Mill Race pumping station area, a rather narrow area between the highway and the levee. We investigated two possibilities; one, putting in a pond or, two, putting in a pump. We found the ponding was slightly cheaper. However, the only way the ponding could be carried out would be to put in a levee paralleling the highway which shows there next to the levee. Furthermore, the ponding we could get there was less than the amount that we thought was desirable. I believe the runoff expected there was about a 2-inch storm in 24 hours; therefore, we went to a plan which was slightly more expensive from the point of view of the Federal Government and from the local interests' point of view. I believe the order of the magnitude is from $135,000 to $149,000 to put in the pumping plant instead of this inside ponding area and levee.

The remainder of the increase, amounting to $60,000, is accounted for by increasing the pumping capacity of the Spring Street pumping station. That is the green mark just north of the two horizontal black lines representing the railroad relocation. I believe this was necessary because it would not adequately handle the runoff to be expected.

Mr. CEDERBERG. From the planning report, it indicates the city made some changes in its sewers which evidently increased the amount of flow into that stream.

Colonel STARBIRD. That is correct. I recall that now.

Mr. CEDERBERG. Why should the Federal Government be charged with that additional cost?

Colonel STARBIRD. Generally the practice we operate on is that the Federal Government gets the water through the levee, or over the levee. We pick it up in the interceptor mains, if necessary, paralleling the levee, generally, to get it to the place where it is most economical and practicable to get it over or through. The local interests put in all drains other than that.

Mr. CEDERBERG. Well do you really know yet where this water would have gone had the city not decided to change the sewers to this location?

Colonel STARBIRD. I imagine it would have ponded behind the level. That pumping station would have taken care of the pumping of Spring Run at the time when the Lycoming Creek is at a situation where gravity drainage cannot occur. Now what would happen if the pump would not work to remove the water as fast as it was coming down—then it would pond.

Mr. CEDERBERG. Do we have anything to say in regard to a city making a change in this manner of their sewers, or do we just have to accept it as an inevitable result, if they change it, and then do we have to assume responsibility for the pumping?

General CHORPENING. I am sure that all plans of the city in connection with taking care of their storm water—and they must bring the drainage down to the levee—have been worked out with us; otherwise we would never know where we were in our planning. But something always has to be done with the water that is trapped behind the levee, and it is the responsibility, as Colonel Starbird brought out, of the local authorities to get that water down to that point. The Federal Government will get it over the levee, but the local interests, again, must operate whatever structures are provided for the purpose.

Mr. CEDERBERG. I assume that is in accord with Federal regulations, but it is another instance where I think we are awfully liberal. In any other city I know of, it has to take care of the water all the way into the stream. Of course in this instance we are faced with that cost, and I do not suppose there is much else we can do about it.

Will you give us something regarding the status of local acquisition of rights-of-way along the Lycoming Creek, and the actual status of the works that are in place along the creek?

Colonel STARBIRD. It had been held up somewhat due to difficulties in effecting condemnations that were in the mechanical process.

Mr. CEDERBERG. Would you provide that for the record, please?

Colonel STARBIRD. I can provide a statement for the record on that.

(The information requested is as follows:)

A new group in the Office of the Attorney General of Pennsylvania, which is effecting the condemnations on this project, has been moving somewhat slowly in the process of becoming oriented to the situation and is currently running about 2 months behind schedule. However, it is expected that these condemnations will proceed satisfactorily in the very near future.

Mr. CEDERBERG. In the event that we are being held up in that procurement, would it be wise to appropriate these additional funds?

Colonel STARBIRD. That was the reason for the check that I mentioned that we have just made.

The holdup, as I mentioned, was a mechanical one. The district has assured us that they expect this to be taken care of now, so that the next lands will be available immediately.

Mr. CEDERBERG. If they are not made available immediately, you cannot use the funds; is that correct?

General CHORPENING. If they are not made available by the time scheduled, we would be delayed.

Mr. CEDERBERG. You would be delayed in that event?

General CHORPENING. Yes, sir; there would be a delay.

BELTON RESERVOIR, TEX.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$901,233	$2,373,781
Dec. 31, 1953	1,185,421	2,732,827
June 30, 1954 (estimated)	572,600	672,600

STATEMENT OF AVERAGE ANNUAL BENEFITS

Located on the Leon River about 3 miles north of Belton, Tex., the project will afford a high degree of protection from floods to 6,135 acres in the Leon River Valley; will assist materially in reducing the frequent flooding of 69,080 acres of agricultural lands in Little River Valley; will assist in the control of floods in the Brazos River Valley. Additional benefits will be obtained for municipal and industrial purposes as well as for pollution abatement by means of regulation in periods of low flow. The project will provide 125,700 acre-feet of conservation storage of which 45,000 acre-feet is to be made available for irrigation in the Leon, Lompasas, and Little River Valleys. Recreation and propagation of wildlife will also be benefits provided by the project. Average annual benefits total $1,151,800 of which $1,001,800 are for flood control and $150,000 for streamflow regulation.

Average annual charges: Average annual charges are estimated to be $594,516.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Utility relocation, electric lines	$42,500
(*b*) Dam, completion of embankment (nonoverflow section), spillway (overflow section)	2,869,800
Proposed in fiscal year 1954 but not yet in force: (*a*) Road relocation, Bell County	136,000
Proposed in fiscal year 1955	None

Mr. RABAUT. The next item is the Belton Reservoir.

This is a flood-control project with an authorization under the 1946 act.

This project calls for a total Federal estimated cost of $14,300,000, and appropriations to date total $12,189,700, and it is 85 percent completed.

The request for fiscal year 1955 is $1,850,000, which will bring it to 98 percent of completion, and the balance after 1955 to complete is $260,300.

It is noted here that there is a cost increase of $1,548,000.

Will you tell us something about that?

General CHORPENING. You will recall that last year we took a very sizable decrease in the cost estimate of around $5 million, and at that time I indicated that we were reluctant to make these changes, because of 2 facts. One was that sometimes things come up later that might serve to increase the cost, and the very one I mentioned has occurred. It has specifically happened, in connection with the real estate, and that has caused this increase.

Last year we had only bought lands immediately adjacent to the dam. We had an appraisal made some few years ago on which we were basing our other costs for real estate. Since that time we have found that due to the development of the area that our estimates on real estate just were unrealistic. We have had to increase the cost. The increase is for less than the amount we decreased the estimate last year, but still it is an appreciable increase.

I will say also that this estimate was based on the earlier policy of acquiring fee simple lands in most of the area. We hope there will be some decrease when we are able to apply our new policy.

Mr. RABAUT. How much was the increase in the cost of real estate in comparative parcels from the original cost?

Colonel STARBIRD. The overall increase in real estate was from $3,414,000 last year to $4,752,100 this year. The total amount of land involved was about 34,000 acres, slightly over 34,000 acres, and the increase would be on the order of an additional 40 percent in the cost per acre above our estimate of last year.

Mr. RABAUT. Of course, when you are buying that much land, it is difficult to go out and make one swoop of it. When you buy some of it, the landowners are put on notice that you want some more, and that serves to start a hike in the prices.

General CHORPENING. We have that difficulty; yes, sir.

Mr. RABAUT. Did you have any inclination a year ago when you made the reduction that you thought you were hitting too low, or how was it that this happened?

General CHORPENING. We had some intimation that there might be some increase. However, that was an intimation only, and we had a full appraisal made later which confirmed what was beginning to be suspected. However, at the time I testified here last year, I did not have any idea that we were going to have an increase of this kind, or I certainly would not have taken that big cost reduction on the project.

Mr. RABAUT. What do you feel about your ability to complete the project with requested funds up to this final 2 percent, General?

General CHORPENING. We feel that the estimate is reliable now, and it will complete the project.

Mr. RABAUT. What do you expect to do with this 2-percent holdover?

Colonel STARBIRD. That is deferred recreation and cleanup work that may be required.

Mr. RABAUT. What change was established in the benefit-cost ratio from your figures the last time, and your figures now?

Will you supply that information for the record?

Colonel STARBIRD. We will furnish it for the record.

(The information is as follows:)

The previous benefit-to-cost ratio was 2.22 to 1, and the current ratio is 1.94 to 1.

Mr. DAVIS. What is the reason for your anticipation that you are going to have in the neighborhood of $600,000 unobligated and unexpended at the end of this fiscal year?

Colonel STARBIRD. We are going to have $672,600 unexpended and about $100,000 of that will be obligated. The primary cause is that our land acquisition is being restudied, as General Chorpening said, to try to evaluate what should be our policy of taking with respect to the various plots.

Mr. DAVIS. Is that restudy of the land policy and reevaluation of this project in connection with the possibility of obtaining easements instead of fee title for some of the land?

Colonel STARBIRD. That is correct, sir.

Mr. RILEY. Is this the only source of supply of water for Fort Hood?

Colonel STARBIRD. I am sure it is not the only source, because I do not believe they are taking it from there yet. At least, Fort Hood operated before they could take it from here.

General CHORPENING. I do not know for sure, but I do not believe that Fort Hood contemplates getting all the water from this reservoir.

Mr. DAVIS. I note here that quite a little is allocated to Fort Hood.

General CHORPENING. Yes, sir.

DALLAS FLOODWAY, TEX.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$383,430	$716,530
Dec. 31, 1953	540,861	735,775
June 30, 1954 (estimated)	None	250,000

STATEMENT OF AVERAGE ANNUAL BENEFITS

Substantially complete protection to the large area of residential and industrial developments in the city of Dallas will be provided as soon as the Garza-Little Elm Reservoir on the Elm Fork, the Grapevine Reservoir on Denton Creek, and the Dallas Floodway on the Trinity River are placed in operation. The project will provide more floodway capacity, greater stability of the existing levees, and adequate interior drainage. Improvement of the existing levees and floodway and the interior drainage facilities not only will benefit the area within this important distribution and commercial center of the Southwest, but also will result in more widespread benefits to the numerous industrial, commercial, and transportation facilities. Total annual benefits creditable to the combination of projects consisting of the Garza-Little Elm and Grapevine Reservoirs and the Dallas Floodway are estimated at $5,185,400, of which $4,575,400 is from flood control and $610,000 from water conservation.

Average annual charges: Average annual charges are estimated to be $2,038,590.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Levee embankment and drainage facilities (area A)	$383,700
(*b*) Turtle Creek pressure sewer (pt. 1)	1,000,000
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955:	
(*a*) Levee embankment and drainage facilities (area D)	549,100
(*b*) Lake Cliff pressure sewer	265,100
(*c*) Turtle Creek pressure sewer (pt. 2)	2,029,000

Mr. DAVIS. The next project is the Dallas Floodway, where we have an estimated total cost of $10.4 million, of which $300,000 is to be from local contributions, making a total estimated Federal cost of $10,100,000.

There have been appropriations to date, including $430,000 for the current fiscal year, of $1,761,500.

We have before us a request for $1.3 million which will bring the project to about 30 percent of the total estimated cost.

Here is another one of those Texas projects where last year we were told that good bidding made it look as if the cost estimates could be reduced, and here is another one where the cost estimate has been raised substantially.

What is the explanation for that?

Colonel STARBIRD. Here are copies of the planning report, which I have marked so as to make the explanation easier for you to follow.

We have had three basic factors, exclusive of price level change, which have led to that cost increase.

The three factors are as follows: The Turtle Creek pressure sewer was indicated last year at the time of the hearings as having an increase in cost, and the information given for the hearings last year was information called for from the field at the time of the hearings.

The cost estimate which leads to an increase of $659,400 in this year's estimate on Turtle Creek is the same estimate as given on page 459 of the testimony of last year.

The explanation is that they found foundation conditions such as to warrant further excavation and backfilling, and strengthening of that conduit, so as to make it safe. The net effect thereof was a $659,400 increase.

The next increase is one which took place on the upper or south end of the levee system on the north bank, and you will note that I have colored thereon a blue marker which I will refer to hereafter as the Nobles Creek diversion. You will also note that I have shown a blue line across the levee in the neighborhood of the proposed Hampton Roads pumping station. At the time of the preparation of the estimate last year, the estimate was based on the building of the Nobles Creek diversion channel, to divert the flow of Nobles Creek around the end of the levee and a sluice was contemplated where the proposed Hampton Roads pumping plant is now located.

Two things have occurred that have led to this change. In the first place, the cities outside of Dallas proper, but adjacent to Dallas, built a water filtration plant in the area where we originally intended that diversion channel. That precludes the putting of that channel there without a cost greater than the alternate solution which I will mention.

At the same time, there has been another change made in criteria of design. In 1948 we put in some gages to try to estimate the runoff to be expected from a design storm. We have been reading those since, and making computations.

Partially due to that study since 1948, wherein we have obtained data in addition to that previously available, and partially due to a speedup in the development of structures, we have found an increase in the expected rate of runoff, such as on roads and the like, and we now believe that the design should be based on 7.9 inches of runoff in 24 hours, instead of 6.4.

With that high design criteria, a large portion of the area that surrounds that block which is entitled "East Levee" would be flooded by backwater and a sluice could not handle it.

Furthermore, there has been development in that area that would be flooded. Therefore, we believe the only practical solution is to eliminate the Novles Creek diversion that I mentioned earlier, and to put in a Hampton Roads pumping plant. The net effect of that change is an increase of $251,000.

The third increase is on the opposite side of the river, and you will notice a place that has been colored in red on your map.

That is called the Coombs Creek detention basin. That is a basin that was built by local interests in the past. It has one outlet which is a 6-foot conduit. The basin consists of a levee and the top of the levee is slightly higher than the main line levee along the river. That gives you a head which permits water to flow out of the diversion basin into the river. With the higher assumed runoff, raising it from 6.4 to 7.9, the basin might be overtopped unless raised slightly, and another conduit added.

The proposed plan now is to add that conduit which will be similar to the first conduit, and to raise the detention basin.

As I remember, it is a 4-foot raise. I might mention in that connection that during a storm in 1947, I believe it was, water actually reached the spillway of the levee and detention basin.

The detention basin has a spillway in addition to the conduit. The spillway would spill into the area behind the levee.

The report from our field agency is that at that time the levee was judged to be close to failure. The raise and the conduit would both avoid the possibility of failure with the higher assumed criteria.

It would also reduce the frequency when that spillway came into play, spilling into the developed area outside the levee, but below the detention basin.

The total increase there involved is $406,300.

Mr. DAVIS. The rules of the game have been changed to the tune of about $2 million rather late in the game; have they not?

Colonel STARBIRD. We have found a need for a redesign in large measure due in part to an increased criteria which we believe should be adopted to provide adequate safety, and in part due to developments in the area.

General CHORPENING. I will say this: With regard to some or most of these changes which we have been discussing which increased the cost on this project, we should have known about them sooner and reported them.

On the other hand, this project is one that is protecting a very concentrated industrial area—one of great value, and a growing area. So, if there is any justification in not earlier realizing the criteria that ought and has now been established and which occasioned greater cost, that would be it.

I think, too, and possibly the chairman's questions will bring this out later in the discussion, the city here prior to the time this became a Federal project did expend, as I recall it, $20 million of its own funds in trying to provide something for itself, as contrasted with many of the others that we have discussed.

Here, the city has done, and is doing, its part. In the overall, that is a point in their favor.

But, I want to make it very clear that I do feel that we should have ourselves anticipated some of these costs last year.

Mr. DAVIS. What is the relationsip between this floodway and some of the other projects that have been developed in this vicinity?

Colonel STARBIRD. This is a part of the comprehensive plan for the Trinity River. The plan consists of two floodways—the Dallas Floodway, and the Fort Worth Floodway—which operate in conjunction with the Grapevine-Lavon-Garza-Little Elm Reservoirs.

The reservoir effect is taken into account in connection with the design of the drainage system. I might mention that the problem of determining what runoff you will get in a particular area from a certain rain, as you can imagine, varies tremendously with the areas and does require detailed study.

Mr. DAVIS. Can we be assured now that the design which you have at this time is going to be a satisfactory one, and is a firm one, and that we will not be having to change it?

Colonel STARBIRD. We feel that we have a reasonably firm estimate, sir.

Mr. DAVIS. We shall watch very closely the design and cost estimate of this project.

FORT WORTH FLOODWAY, TEX.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$81,651	$664,201
Dec. 31, 1953	783,748	1,160,427
June 30, 1954 (estimated)	None	428,000

STATEMENT OF AVERAGE ANNUAL BENEFITS

The project is located in the city of Fort Worth along the West Fork and the Clear Fork of the Trinity River and is a unit of a coordinated plan for flood control and water conservation in the Trinity River Basin. This project, combined with the Benbrook Reservoir on the Clear Fork, will provide complete protection to about 1,710 acres of highly developed residential, commercial, and industrial property located in the bottom lands within the city of Fort Worth. The average annual benefits creditable to Fort Worth Floodway and to the completed Benbrook Dam and Reservoir are estimated at $1,305,000 of which $1,232,200 are for flood control and $72,800 for water conservation.

Average annual charges: The average annual charges for the combined projects are estimated at $777,250.

Data on continuing contracts	*Total estimated contract earnings*
Description of work:	
Continuing contracts in force:	
(*a*) Railroad relocation, St. Louis-San Francisco bridge	$123,900
(*b*) Channel excavation, levee embankment, drainage facilities (3d stage)	626,000
Proposed in fiscal year 1954 but not yet in force:	
(*a*) Channel excavation, levee embankment, drainage facilities (6th stage)	376,900
(*b*) Channel excavation, levee embankment, drainage facilities (Crestwood-Brookside)	414,800
Proposed in fiscal year 1955	None

Mr. CEDERBERG. The next project is the Fort Worth Floodway, in Texas, which has a total estimated Federal cost of $3,865,000, and total appropriations to date of $3,625,000.

There is a request before us at this time for fiscal year 1955 of $240,000 which, if granted, will complete the project.

General, can you assure us that the project will be completed with this appropriation?

General CHORPENING. Yes, sir; and I believe I am correct in stating that there is a slight decrease in cost there, sir.

Mr. CEDERBERG. We trust that that information will be forever correct.

Mr. DAVIS. You have reduced your cost estimate here by some $300,000 since last year; is that correct?

General CHORPENING. Yes, sir.

Mr. DAVIS. You are holding firm to your previous design here, and do not have any plans for extending it to conform to the wishes of a certain minority down there; is that right?

Colonel STARBIRD. We have no such intention.

GARZA-LITTLE ELM RESERVOIR, TEX.

Date	Unobligated balance	Unexpended balance
June 30, 1953	−$51,682	$1,023,027
Dec. 31, 1953	983,739	1,641,551
June 30, 1954 (estimate)	None	315,400

STATEMENT OF AVERAGE ANNUAL BENEFITS

Located in the eastern portion of Denton County, Tex., on the Elm Fork of Trinity River about 22 miles northwest of Dallas, the project in combination with Grapevine, Banbrook, and Lavon Reservoirs, and with the Fort Worth and Dallas floodway projects will provide flood protection benefits to the large area of residential and industrial developments in the city of Dallas. Garza-Little Elm and Grapevine Reservoirs will provide flood-control benefits to 29,400 acres of agricultural lands along the Elm Fork and Denton Creek, and will help reduce flood damage along the main stem of the Trinity River. In addition to flood-control benefits, these two reservoirs will provide urgently needed water for the cities of Dallas, University Park, and Highland Park, as well as conserve wildlife and provide recreational areas. Since the project is functionally dependent on other elements of the Trinity River flood-control plan, no determination of the benefits creditable solely to the reservoir has been made. The total average annual benefits amounting to $5,185,400 have been evaluated and credited to Garza-Little Elm and Grapevine Reservoirs and the Dallas floodway projects. Of the total figure of $5,185,400, $4,575,400 is attributed to flood control and $610,000 to water conservation.

Average annual charges: The corresponding average annual charges are estimated to be $2,038,590.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Relocation of roads, engineering service, Highway 24T	$65,500
(*b*) Relocation of railroads, bridge for Missouri-Kansas-Texas RR	493,600
(*c*) Relocation of railroads, tracklaying, Missouri-Kansas-Texas RR	94,700
(*d*) Dam, nonoverflow section, completion of embankment	3,626,300
Proposed in fiscal year 1954 but not yet in force:	
(*a*) Relocation of roads, Highway 24T (Little Elm Creek)	300,000
(*b*) Relocation of roads, completion of Highway 24T and F. M. 423	276,500
Proposed in fiscal year 1955: (*a*) Relocation of roads—county roads	177,800

Mr. RILEY. The next project to be considered is the Garza-Little Elm Reservoir in Texas, where the total estimated cost is $24,732,100, and the total estimated local contribution is $3,410,100, leaving the Federal Government $21,322,000 to complete the project as designed.

Some $16,697,600 has already been appropriated, and the request this year is for $4,400,000, which will substantially complete the project, apparently.

Is that correct?

Colonel STARBIRD. That is correct, sir.

Mr. RILEY. What will this $4.4 million do, Colonel?

Colonel STARBIRD. Sir, that will be used largely in continuing and completing the acquisition of lands and continuing the embankments.

The total funds that would be available to us, including the carry-over and the appropriation requested for 1955, will be expended in the following manner:

$3,757,300 for continuing and completing the land acquisition; $762,800 for completing relocations; $44,700 for breaching the old water supply dam that is within the reservoir; $1,687,600 for completing the embankment; and miscellaneous work, $77,000.

LOCAL CONTRIBUTION

Mr. RILEY. What have the local interests contributed here, and are they meeting their obligations?

Colonel STARBIRD. Sir, the local interests in this case have within the new reservoir area a water supply dam. They are to be given the equivalent storage to that which they now have in their reservoir without cost. In addition, they will purchase storage beyond that they now have available in their reservoir.

Approximately 320,000 acre-feet is involved, and for this they will pay $3,410,100.

The local interests, additionally, will provide perpetual easements on the land within their own reservoir, which involves over 15,000 acres. They will allow their dam to be breached, and they will bear their proportional share of the maintenance and operational costs. The local interests are meeting their obligations. They have made available the reservoir area at such time as is needed. They have signed a contract with the Federal Government which enunciates the various conditions I have already named. They have contributed toward their $3.4 million all except some $400,000 which is expected in February of 1954.

Mr. RILEY. As I understand it, the city of Dallas has a small reservoir from which they obtained their water, and that is the location which you picked out for this flood-control project, and they are deeding all of that to you, and in addition paying in cash $3,410,100 for additional water supply?

Colonel STARBIRD. For water supply storage; yes, sir. That is in cash. They provide land plus cash.

Mr. RILEY. So, the contribution really is considerably more than the $3,410,100 shown here?

Colonel STARBIRD. That is correct, sir.

Mr. RILEY. Have you completed all of your land acquisition on this project?

Colonel STARBIRD. No; we have not, sir. The land acquisition here is approximately 57 percent complete. Here, again, this is a reservoir where we are reinvestigating the possibility and the practicability of application of the new land policy for the remainder yet to be acquired.

Mr. RILEY. Do you have any contingency items in these appropriations that might be recoverable?

Colonel STARBIRD. There is approximately $1,300,000 still carried as contingencies.

Mr. RILEY. Is there any possibility that some of that might revert to the Treasury, depending upon certain conditions?

General CHORPENING. That is correct, sir; however, I do not think that there is that much still remaining.

Mr. RILEY. Would you correct that for the record, please?

General CHORPENING. Yes, sir.

(The information follows:)

Remaining contingencies amount to $1,304,000.

CONSTRUCTION OF LIVING QUARTERS

Mr. RILEY. Do I understand that you are going to have some construction there for operators quarters?

Colonel STARBIRD. Yes, sir; there is one set of quarters for that reservoir.

Mr. RILEY. Will the Corps of Engineers operate that or will the city of Dallas?

Colonel STARBIRD. No, sir; I believe we operate it; the major interest in the reservoir is still with the Federal Government. We will charge, as I mentioned, local interests for their proportional share of the maintenance and operation.

Mr. RILEY. There are no living quarters available within a reasonable distance there that might be used rather than constructing operating buildings?

Colonel STARBIRD. Yes, sir; there are quarters within a reasonable distance, which we understand as normal commuting distances. It is highly desirable, though, that a man be living at the site, and that he be at a place identified as a part of the reservoir and that individuals know how to get hold of him there in a hurry.

Furthermore, such individual by living on the site will be known to be there, and he will prevent some of the damaging and pilfering that might take place in the area of the reservoir and its operating equipment.

Mr. RILEY. Is this policy followed in most of these projects?

General CHORPENING. Yes, sir. At every one of our dams we consider very thoroughly the advisability of providing operators' quarters.

Colonel Starbird has very well given you the overriding reasons why we feel it is essential that some housing be built at most of these reservoirs, but I can assure you that we are very carefully considering it, so that we are not building more houses than required, but the minimum which we feel is necessary to protect and operate and preserve a large Government investment, in this case $25 million.

Mr. RILEY. I asked that question because I recall out at Albuquerque at the Jemez Dam the engineers took over some quarters that the contractor had built some 4 or 5 miles away from the dam.

General CHORPENING. I do not recall what they have at Jemez Canyon. Of course, that dam, cost about $4,125,000, and it is a much lesser structure, and there would not be quite the requirement at that location as here.

I am not familiar with that particular situation.

Mr. RILEY. It is considerably isolated. It is up in the hills where some fellow could go in there and create a lot of mischief if he was so inclined.

General CHORPENING. Possibly we ought to review that to see whether we should not build a set of quarters; it may be that we should.

Colonel STARBIRD. There is one interesting thing about this particular situation: We are able to centralize the shops and to provide that the man who is over three separate reservoirs lives as the senior operator on the site. In other words, for 3 reservoirs, we have 1 central set of shops, plus only 3 sets of quarters.

LOCAL CONTRIBUTIONS FOR GARZA-LITTLE ELM PROJECT

Mr. DAVIS. In our discussion yesterday, or the day before, General Chorpening, I will call to your attention the depletion of the Federal funds which corresponded to the accumulation of the local funds, and you used the Garza-Little Elm project as being an illustration of that, and I believe you mentioned that you would check into that situation and give us your comments on it in connection with that project?

General CHORPENING. Yes, sir.

Colonel STARBIRD. The major portion of the local funds have come to us recently. We received $500,000 on January 24, 1949. Then the city gave us $267,000 in November 1952. Then a bond issue was passed in early 1953, and immediately thereafter they gave us $1,233,000; and after so long they will give us $1,400,000 more before the end of the fiscal year.

Funds which had been made available by local interests at the beginning of the fiscal year totaled $3,400,000 and expended in Federal funds at the beginning of the fiscal year was $1,023,027. At the end of this year the non-Federal funds will be reduced to an unexpended balance of $645,000. The Federal unexpended balance will be reduced to $315,400. In other words we are making an effort to use those non-Federal funds as rapidly as practicable.

Mr. DAVIS. Inasmuch as this is the last important appropriation for this project, we certainly want to be sure that when we come to the end of it we have not just used all of the Federal funds and if there is a surplus such surplus will be turned over to the local interests.

General CHORPENING. That will not be done.

LAVON RESERVOIR, TEX.

WATER CONSERVATION AND FACILITIES

Mr. DAVIS. There is one thing I would like to call to your attention, and that is the provision in the 1952 appropriation which permitted the use of not more than $300,000 for the construction of water conservation and utilization facilities, Lavon Reservoir. Will you tell us what has been done in connection with that appropriation.

General CHORPENING. That intake has been completed. Although not written into the act, I am sure in my testimony at that time I stated that whatever the cost was it would be included in the agreement made with local interests, to be paid for over the life of the project, which is assumed to be 50 years, and that will be done. In the matter of making agreement with the local interests and the payment for the storage space available in these reservoirs we have encountered some difficulties in that since these projects are based on a 50-year life, we want to make the contract provide for payments over that 50-year period, and that would normally be the period of the contract; but local interests want to, in their agreement with the Government, secure the permanent right in that storage and water.

Now under the laws, as we read them—and I have discussed this with our counsel quite a number of times—we do not believe that we can make such an agreement to commit the Government beyond the 50 years, which is the basis of the economic justification. There are arguments on both sides of that matter. Looking at it from the local standpoint, they are going to sell bonds, I suppose, to provide a water plant for the community, and from their standpoint it would, of course, be preferable and desirable to have a permanent right in the storage there as against the 50-year period we discussed.

That is about the nub of the argument and the discussions that we have had on the matter. There are some other legal ramifications; that briefly is what it is, however. Actually, they are not objecting to the period of repayment in 50 years. They are perfectly willing to pay off in 50 years, but they want assurance in the contract that they have the water beyond that time.

As it now stands, we have stated that we cannot under the present laws do more than make the contract to pay out in 50 years and I think we have gone along with some references about repairs or renewals, but no firm commitment that we would go beyond that period.

Mr. DAVIS. Where does that leave us in this particular case? We have spent the money now and do not have any commitment.

General CHORPENING. Certainly something is going to break pretty soon, because they want the water and if there is not some legislation enacted I am quite certain they are going to come around and sign a contract with us.

Mr. DAVIS. In other words, the interest of the Federal Government is still protected in the matter.

General CHORPENING. That is right.

TEXARKANA RESERVOIR, TEX.

Date	Unobligated balance	Unexpended balance
June 30, 1953	−$2,641,567	−$1,497,663
Dec. 31, 1953	6,146,107	7,611,718
June 30, 1954 (estimate)	None	3,400,000

STATEMENT OF AVERAGE ANNUAL BENEFITS

Located on the Sulphur River, 8 miles southwest of Texarkana, Tex., the project provides important flood protection benefits to downstream areas. The major benefits derived in these areas are from protection of crops, prevention of livestock losses, and material reduction of damage to levees, railroads, highways, and industries. The operation of this reservoir under a recurrence of the 1945 flood, which caused damages estimated at $16 million, would prevent the inundation of 86,000 acres of land, of which 39,000 acres are in agricultural use; and prevent flooding of the main highway and railroad serving the Red River Ordnance Works, one of the Nation's largest munitions facilities. The average annual benefits are estimated to be $1,962,000, of which $1,955,000 are for flood control and $7,000 for municipal and industrial water supply.

Average annual charges: Average annual charges are estimated at $1,358,200.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Road relocation	$262,500
(*b*) Reservoir clearing	1,945,000
(*c*) Dam-closure section, spillway and outlet works	5,865,200
Proposed in fiscal year 1954 but not yet in force:	
(*a*) Road relocation, U. S. 67	3,670,000
(*b*) Railroad relocation, St. Louis Southwestern Ry. embankment, riprap	2,300,000
(*c*) Railroad relocation, St. Louis Southwestern Ry. bridge	1,607,000
Proposed in fiscal year 1955	None

Mr. RABAUT. We have a project, authorized under the 1946 Flood Control Act for Texarkana, Tex., Reservoir. The total estimated Federal cost of this project is $33 million. The appropriations to date total $24,274,000, or 74 percent of the funds; and the appropriation requested for the fiscal year 1955 is $4 million, which will bring the project to 86 percent of completion, leaving a balance for future date of $4,726,000.

Will you give the justification for this request of the $4 million, please?

Colonel STARBIRD. This is a project scheduled for completion in 1956. It is a part of the overall Red River comprehensive plan, and the first step in carrying out the authorized plan for this basin from the standpoint of additional reservoirs beyond the Denison Reservoir built on the main stem of the Red River.

The funds requested with the carryover will be largely used to continue relocations and to continue clearing.

The amounts concerned are: to continue relocations, $5,441,200; to continue clearing operations, $1,004,000; to continue land acquisition, $393,300; to complete the closure section of the embankment, which closure has been made, $216,800; to complete the roads, $118,900; to complete the channel work, $227,900; and miscellaneous work, $18,000.

Mr. RABAUT. Your unexpended funds would bring the unexpended balance to $3,400,000.

Colonel STARBIRD. Yes, sir; that is our anticipated carryover into fiscal year 1955.

Mr. RABAUT. Why do you have such an unexpended balance; is that due to not getting the work under way last year?

Colonel STARBIRD. The unexpended balance largely results from the fact that at one time a major element of the relocation work was not satisfactorily agreed upon between the parties and the matter was placed in the hands of the courts. That, as I remember it, was

in the fiscal year 1953. Since that time a satisfactory agreement has been reached. We have approved and returned to the field for execution a contract between the Federal Government and the railroad concerned. As a result, the funds that were deposited with the court at that time, that is, were placed with the court, have been returned.

Mr. RABAUT. For this year then you will have available to you to continue the work about $7,400,000.

Colonel STARBIRD. That is correct.

Mr. RABAUT. With the project being 74 percent completed as of this time, or 74 percent of the funds have been allowed to you at this time, this seems like a proper amount to put the project goal in its last stages.

How do you propose to spend the money that you have available to you in the sum of $6,146,107, during the last half of the fiscal year 1954?

Colonel STARBIRD. It will be obligated on the relocation of U. S. Route 67, which has a total estimated cost of $3,670,000; on the railroad relocation of the St. Louis-Southwestern Railroad with a total estimated contract cost of $2,300,000; and relocation of the St. Louis-Southwestern Railroad bridge with a total estimated contract cost of $1,607,000.

I realize that those sums come to more than the amount you mentioned. They are continuing contracts.

Mr. RABAUT. The benefit-to-cost ratio in this project is how much?

Colonel STARBIRD. The present benefit-cost ratio is 1.44 to 1.

Mr. RABAUT. I see that the Red River ordnance plant is located immediately to the north of the reservoir, which is one of the Nation's largest, and one of the few in our present postwar operative status, and is currently operating at a productive rate in excess of its World War II capacity. This is going to be of service to that plant; is that correct?

Colonel STARBIRD. That is correct.

PROJECTS NOT REQUIRING SPECIAL LEGISLATION

Mr. DAVIS. We will take up the next item where we have a request for $200,000 for projects not requiring specific legislation. We will insert page 565 of the justifications in the record.

(The matter referred to follows:)

(2) PROJECTS NOT REQUIRING SPECIFIC LEGISLATION

Section 205 of the 1948 Flood Control Act as amended by section 212 of the 1950 Flood Control Act provides for the allotment of not more than $3 million annually to construct small flood-control projects on streams and at locations throughout the United States, where such construction has not been specifically authorized by the Congress and where the Federal cost will not exceed $150,000 at any one locality. The projects are selected and approved for construction by the Chief of Engineers upon determination of engineering soundness and economic justification, and subject to the normal requirements of local cooperation as prescribed by existing law for authorized flood-control projects.

Funds in the amount of $200,000 are required in fiscal year 1955 for the construction of economically justified local flood-control projects where the need for protection from flooding is such that the delay involved in submitting formal survey reports to the Congress would seriously jeopardize the social security and economic stability of the areas to be protected and, in some cases, unnecessarily prolong the flood threat to the lives of residents.

Mr. DAVIS. For the record, General Chorpening, will you insert the tables of allocations on these projects for the fiscal year 1954.

General CHORPENING. Yes, sir.

(The matter referred to follows:)

Allocation of funds from appropriation for fiscal year 1954 for work pursuant to section 212 of the 1950 Flood Control Act.

Name of project:	*Amount*
Molalla River, Milk Creek location, Oregon	[1] $57, 585
Chester River, Chester, Pa	[1] 73, 000
Clearwater River, Ahsahka location, Idaho	144, 500
Missouri River, New Haven, Mo	141, 500
Bayfield, Wis	[2] 146, 000
Gordon Creek, Hattiesburg, Miss	[2] 83, 000
Preparation of project reports	54, 415
Total	700, 000

[1] In addition funds were allocated to this project from prior-year appropriations.
[2] Pending.

Mr. DAVIS. Will you also furnish for the record the tables of the proposed allocations for the fiscal year 1955?

General CHORPENING. As we know them now. Of course, during the year there always come to us requests from the various parts of the country and it is possible that at some future time this allocation may be changed.

(The matter referred to follows:)

The following projects are under detailed study for possible accomplishment in fiscal year 1955:

Project:	*Estimated Federal cost*
Mad River, Blue Lake, Calif	$146, 000
Mission Creek, Cashmere, Wash	35, 000
Field studies and reports	19, 000
Requested fiscal year 1955 appropriation	200, 000

In addition, the following projects are under preliminary study:

Rooster River, Bridgeport, Conn.
Flint River, Montezuma, Ga.
Portneuf River, Bancroft, Idaho.
Deep Creek, Potlatch, Idaho.
Lake Okabeena, Worthington, Minn.
Rush Creek, Rushford, Minn.
Yellowstone River, West Glendive, Mont.
Plentywood, Mont.
Belt, Mont.
Choteau, Mont.
Livingston, Roscoe, Rockland area, New York.
Buffalo Creek, Scranton, N. Dak.
Yellow Creek, Amsterdam, Ohio
Suislaw River, Cushman, Oreg.
North Fork Suislaw River, Oreg
Oil City and Rouseville, Pa.
Tranquitas Creek, Kingsville, Tex.
Dry Creek, Walla Walla River, Wash.
Buffalo Creek, Rachel, W. Va.
Ten Mile Creek, Wallace, W. Va.
Oconto, Wis.

Mr. DAVIS. What is the status of this fund at the present time?

General CHORPENING. I will have to supply that information for the record.

Mr. DAVIS. If you will, please.

(The matter referred to follows:)

The following balances, although allocated, are outstanding on section 212 projects as of December 3, 1953:

Unobligated	$1,397,706
Unexpended	1,543,591

EMERGENCY BANK PROTECTION

Mr. DAVIS. I note that there is no request before us at the present time for emergency bank protection. Does that indicate you have sufficient carryover funds to handle that?

Colonel STARBIRD. We have a little over $400,000 remaining in that fund.

Mr. DAVIS. That was the amount that was requested for last year. Still you feel you have enough to carry you during another year without additional appropriation?

Colonel STARBIRD. Based on this last year's experience, yes, sir.

SNAGGING AND CLEARING

Mr. DAVIS. There is set out on page 566 of the justifications an item of $600,000 requested for snagging and clearing. We will insert that page of the justifications in the record by way of explanation.

(The matter referred to follows:)

(4) SNAGGING AND CLEARING

Section 2 of the 1937 Flood Control Act as amended by section 13 of the 1946 Flood Control Act provides for an allotment not to exceed $1 million annually for removing accumulated snags and other debris, and clearing and straightening of the channels in navigable streams and tributaries thereof, in the interest of flood control, provided further that not more than $50,000 shall be expended forthis purpose for any single tributary from the appropriations for any one fiscal year.

The proposed work to be accomplished with the allocation for fiscal year 1955 will provide flood relief for many areas where snags, debris, and sinuous stream channels cause overbank flow even during minor storms. In addition, drainage will be improved in farming areas, permitting increased agricultural production and, in the vicinity of some rural communities, improved sanitary conditions will result. The work to be performed at any single location can be accomplished in a short period of time, thus providing an immediate return on the Federal investment through prompt reduction in flood damages and improvement in drainage. The snagging, clearing, and channel straightening work proposed for fiscal year 1955 will be performed on those streams and at the locations where the need is most urgent. In the last several years the requests for desirable snagging and clearing projects have far exceeded the statutory limit of $1 million, thereby necessitating the selection of those projects which would provide the most critically needed flood relief.

Funds in the amount of $600,000 are requested in the fiscal year 1955 to continue the program of snagging and channel clearing in streams throughout the United States when such work is necessary in the interest of flood control and where the need is most urgent.

Mr. DAVIS. Will you furnish for the record the allocation for the 1954 fiscal year under that head?

General CHORPENING. Yes, sir.

(The matter referred to follows:)

Allocation of funds from appropriation for fiscal year 1954 for snagging and clearing work pursuant to section 13 of the 1946 Flood Control Act.

Project:	*Amount*
Pompton River, N. J	[1] $21, 500
Ioa Stream, island of Maui, T. H	50, 000
Marion County, Fabius River, Mo	50, 000
Canaseraga Creek, N. Y	50, 000
Highwood Creek, Mont	42, 500
Belt Creek, Mont	36, 500
Shonkin Creek, Mont	8, 500
Ashuelot River, N. H	50, 000
Float Road Slough, Ark	50, 000
Teton River, Choteau, Mont	16, 000
Dock Hill Brook, N. Y	5, 500
Kawkawlin River, Mich	38, 000
Macaupin Creek, Ill	6, 000
Chattahoochee River, West Point, Ga	[1] 500
Total	425, 000

[1] In addition funds were allotted to these projects from prior year appropriations.

Mr. DAVIS. Will you also furnish us the contemplated allocations for the fiscal year 1955 and provide us with a statement as to the status of this fund?

General CHORPENING. Yes, sir.

(The matter referred to follows:)

It has been customary for the Congress to provide funds for the snagging and clearing work in the form of a reserve to meet emergency situations as they occur throughout the fiscal year. Recent limitations on appropriations, however, have necessitated the deferment of urgent work of this nature at a number of locations. All funds available for fiscal year 1954 have been allocated, and in addition to those allocations, outstanding requests against the 1955 appropriation now total $470.300, as indicated below:

Project:	*Amount*
Cottonwood and Willow Slough, Madison, Calif	$40, 000
Little Withaloochie River, Fla	45, 100
Spoon River, Ill	50, 000
Root River, Minn	47, 200
Milk River, Mont	23, 000
Shields River, Clyde Park, Mont	10, 000
Pequest River, N. J	40, 000
Newton Creek, Bainbridge, N. Y	50, 000
Skaneateles Creek, Jordan, N. Y	15, 000
Harmons Creek, Brooke County, W. Va	50, 000
Elk Creek, Stonewood, W. Va	[1] 50, 000
Obion River, Tenn	[1] 50, 000
Total	470, 300

[1] Estimate not available. Maximum Federal limitation assumed.

The following amounts are outstanding on snagging and clearing projects as of December 31, 1953:

Unobligated balance	$470, 734
Unexpended balance	527, 517

General CHORPENING. I did want to mention the matter which I started to discuss a moment ago. You will note there is no request in this justification for any further flood emergency funds. The reason there is none is because at this time we have approximately $14,000,000 available from earlier appropriations, so that it was concluded that with the amount available no additional funds need be requested in this year's appropriation.

MONDAY, JANUARY 25, 1954.

MULTIPURPOSE PROJECTS

WITNESSES

BRIG. GEN. C. H. CHORPENING, ASSISTANT CHIEF OF ENGINEERS FOR CIVIL WORKS
BRIG. GEN. EMERSON C. ITSCHNER, DEPUTY TO THE ASSISTANT CHIEF OF ENGINEERS FOR CIVIL WORKS
COL. WILLIAM WHIPPLE, EXECUTIVE FOR CIVIL WORKS
H. COHEN, ASSISTANT CHIEF, PROGRAM DEVELOPMENT BRANCH
CHARLES KINNEY, POLICY AND CONTINUITY BRANCH

Mr. DAVIS. The subcommittee will resume this morning with a discussion of the multipurpose projects including power. We will appreciate a brief summary statement from you, General Chorpening, as to what is involved in this request for multipurpose projects.

GENERAL STATEMENT

General CHORPENING. In the budget this year we are requesting funds for the continuation of 16 multipurpose projects. None of those are new starts. The funds requested in two of those will complete the projects.

I would like to bring a few matters in connection with these projects to the committee's attention. The total amount requested for these multipurpose projects in round figures is $207 million in fiscal year 1955. The total amount being estimated for construction in this entire budget is $308 million. So approximately two-thirds of the funds being requested for construction are for continuation of these multipurpose projects.

I would also like to call to the committee's attention that after the appropriations were made in fiscal 1954, the remaining funds required to complete these 16 projects were in round figures $800 million. You are going to find as we proceed through these projects that in some instances there have been increases; in others, there have been decreases. The net increase, again in round figures, on all of these projects is $13 million. Of that $13 million, however, $7 million is an increase at McNary Dam occasioned by a law passed by Congress which requires that we pay for highway relocations there. So, in effect, the real net difference is $6 million.

I would like to point out that last year in the testimony we showed there was little net increase in the overall cost of the multipurpose program; so that as between July 1951, when the estimates were made up for the 1953 budget, and July 1953, when the estimates were made for the 1955 budget, although there had been increases in construction costs, according to the Engineering News Record index, of about 11 percent, these projects have increased in the net less than 1 percent.

I make that statement to show that in the overall we feel we are on a very sound basis in our estimates. You might say, if we are sound, why then do not they exactly follow what the increase in the Engineering News Record shows. The reason for that, as we have carefully explained to this committee, is that the Engineering News Record is after all an overall guide in the country of all kinds of construction.

We have been receiving quite favorable bids on these projects and we have taken that into account in not increasing the estimates in accordance with the Engineering News Record index.

Mr. DAVIS. That indicates to some extent, then, that their margin of profit in the amount of the contingency contained in these bids you are getting is being somewhat reduced, does it not?

General CHORPENING. It indicates several things. It indicates (1) that in the big heavy type of construction, contractors since the war have had a great amount of experience; a better knowledge of their costs; better trained personnel. It also indicates that competition has increased and that contractors have written off their plant on other jobs, and therefore are not charging the full plant rental they normally would. The competition has been very good in practically all of our advertising for the past year and a half. But the big point I want to leave in the minds of the committee is that we have, by not increasing these estimates, taken into account that the costs of this type of work are not increasing.

That is all I have as an overall statement on multipurpose projects. Colonel Whipple will handle the details of these projects presented here, with the exceptions of the four multipurpose projects in the Missouri River division, which will be handled by General Potter.

Mr. DAVIS. We will be glad to have you proceed in that manner and appreciate having the information you have furnished to us on this overall program.

BLAKELY MOUNTAIN RESERVOIR, ARK.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$1,059,010	$4,043,467
Dec. 31, 1953	4,382,413	5,660,723
June 30, 1954 (estimated)	1,267,700	1,412,300

STATEMENT OF AVERAGE ANNUAL BENEFITS

This project is a multiple-purpose flood control and power reservoir. Average annual flood-control benefits in the amount of $675,000 will be provided by reduced flooding on 101,000 acres of land at and in the vicinity of Malvern and Arkadelphia, Ark. A breakdown of the estimated average annual benefits to be realized from construction of this project is as follows:

Flood control	$675,000
Power (values used for capacity and energy are 20.49 per kilowatt of capacity and 1.40 miles per kilowatt-hour of energy)	1,666,000
Total benefits	2,341,000

Average annual charges: Average annual charges are estimated at $1,593,000.

Data on continuing contracts

Description of work	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Clearing item IV	$837,900
(*b*) Powerhouse	5,589,800
(*c*) Power intake works, butterfly valves	462,900
(*d*) Turbines	1,021,900
(*e*) Generators	1,797,100
(*f*) Gantry crane	42,100
(*g*) Overhead crane	198,200
(*h*) Main control switchgear	115,200
(*i*) Main power transformers	426,800
(*j*) Telephone equipment	5,300
(*k*) Reservation buildings	48,100
Proposed in fiscal year 1954 but not yet in force:	
(*a*) Turbine governing equipment	83,500
(*b*) Main control switchboard	44,700
(*c*) Auxiliary switchgear	68,900
(*d*) Oil circuit breakers	193,700
(*e*) Isolated phase buses	92,500
Proposed in fiscal year 1955	None

Mr. DAVIS. The first project is Blakely Mountain Reservoir, in Arkansas, with a total estimated Federal cost of $31 million. The appropriations to date, including $5,225,000 in the current fiscal year, have been $29,343,000.

We have before us a request for $1,600,000 to bring this project substantially to completion. We are safe in assuming that the $57,000 is a contingency item, are we?

Colonel WHIPPLE. No, sir. There are contingencies in the project, but that $57,000 was reserved for the installation of recreational facilities in the following fiscal year and the completion of a minor amount of items of work on roads. Of course if the contingencies in this project did not eventuate, we could complete this work out of contingencies and not come back for an appropriation the following year.

Mr. DAVIS. I note you have been able, as you approach completion of this project, to reduce your cost estimate by $1,675,000. Is that represented largely by squeezing contingency funds out of the project, or what is the explanation?

Colonel WHIPPLE. It is favorable contracts and prices as the work has developed and, of course, as the work nears completion we do find it possible to reduce contingencies.

There are two other specific minor changes. We have found we can reduce the amount of clearing by $122,000 in accordance with the latest clearing practices we have developed, and also reduce provisions for accommodation of the visiting public by $54,000.

There still are contingency items in this project and it is possible when we complete it we will have incurred costs somewhat less than now estimated.

Mr. DAVIS. You have anticipated an unobligated balance at the end of the current fiscal year of about $1,250,000. What is the reason for that?

Colonel WHIPPLE. Simply that we do not think the work will progress in accordance with the latest contractor's schedule. Most of the work going on now is in connection with the powerhouse. The generator and turbine schedules are now well developed and we

do not think they will submit their invoices by the end of the fiscal year. They, of course, will have to be paid by the installation dates which are in 1954, September and November.

Mr. DAVIS. You are going to make this schedule of having the power units on the line, the first unit in September and the second unit in November of this year, are you?

Colonel WHIPPLE. We expect to do that. There has been some delay on account of a strike in S. Morgan Smith Co., which is manufacturing the turbines, and that has held up several of our projects. However, we have finally gotten hold of the parts in question and think we will be able to meet that schedule.

CONTINGENCY FUND

Mr. DAVIS. In that $31 million estimate of cost you have at the present there appears to be included a contingency of over $1 million. As you are that close to completion, why do you need a contingency fund of that size?

Colonel WHIPPLE. That contingency fund, of course, does include the work that is going on in the current fiscal year, which is very much greater than that proposed for fiscal year 1955. At the time it was estimated last summer there was still $10 million worth of work yet to do.

The major item in that contingency is escalation of the generators, turbines and other electrical equipment which, for the generators was a substantial item.

Mr. DAVIS. How much is the item for that purpose?

Colonel WHIPPLE. Of course we do not know in advance exactly what it will be until we get the final invoice on it; but the total cost of the turbines and generators is $3.5 million. The maximum escalation under the contracts could be the better part of $1 million.

General CHORPENING. I would like to add this on the matter of contingencies in the coming year on these projects. The committee has learned in several instances where we have reduced these estimates too much and then had to come back in another year and indicate some increase in the estimated cost. I do not like to do that.

We have reduced here an amount which is quite a considerable reduction in the estimates since last year. So I would like to say we hold the contingencies in there against the possibilities which will be coming up at the end of the project.

We are going to encounter one here pretty soon where we reduced last year too much and have to come back for more funds. We just went too far in our reduction of estimates. You get into such matters as escalation and such matters as condemnation costs, where we think we are going to come out as estimated, but often court action find we have not allowed enough in the estimate. We also get into the matter of claims where we think we know, but wind up with having to pay more money.

Those are matters on these big jobs that are just impossible to foresee clearly until we get to the end.

ACCESS ROADS

Mr. HAND. I do not understand the statement in the justifications referring to access roads to critical points on the 975 miles of shoreline. Will you explain that?

Colonel WHIPPLE. We find we do need to have access roads for operation and maintenance purposes and reservoir patrol purposes. Those are required in order to check accumulations of drift, particularly when the reservoir is filling and being used for flood control purposes, when uprooted trees and brush start to float around in the reservoir, probably brought down from the tributaries above. We have to remove and burn the drift and must have access roads from point to point in order to be able to contact those portions.

Mr. HAND. Are 975 miles of roads involved?

Colonel WHIPPLE. No, sir; that is 975 miles of reservoir shoreline.

Mr. HAND. I did not mean roads, but there is that much shoreline that you have to have access to at some point?

Colonel WHIPPLE. There are 975 miles of shoreline in the reservoir and that is the length referred to that we require access to. I cannot give you the exact number of miles of road.

Mr. HAND. The shoreline of what?

Colonel WHIPPLE. Of the reservoir itself at a maximum pool elevation when used for flood control.

Mr. HAND. I am not clear how you get that much mileage of shoreline in the reservoir.

Colonel WHIPPLE. I think if you will turn to the back page you will see a diagram in your book showing how many tributaries join together to provide the Ouachita River at that point in the reservoir, and it is a very long convoluted shoreline that constitutes the 975 miles.

Mr. HAND. You are referring to the map at the back of the project and particularly that portion shown on the extreme right of the drawing.

Colonel WHIPPLE. Yes, sir.

General CHORPENING. These reservoirs show up rather amazing shorelines in many, many cases. You must figure in all of the little tributaries on which that water backs up and it adds up to a tremendous number of miles.

Mr. HAND. Can you supply for us the number of miles involved in actual access roads themselves?

Colonel WHIPPLE. We can supply that for the record.

(The information requested is as follows:)

A total of 22.3 miles of roads are required for access to critical points on the 975 miles of shoreline.

Mr. HAND. These existing roads that are presently inundated at varying pool heights—are they roads built by you since the project was started, or are they roads built before the project was started?

Colonel WHIPPLE. They were existing roads built before the project was started.

Mr. CEDERBERG. This project is justified solely on the basis of power; is that correct—or are there some other benefits?

General CHORPENING. No, sir; there are flood-control benefits in this as well.

Mr. HAND. But there is no navigation, I take it.

General CHORPENING. No, sir.

Mr. CEDERBERG. You could not justify it solely on flood control, though.

Colonel WHIPPLE. No, sir; you could not justify it solely for flood control. It is a multipurpose project with very material flood control benefits, totaling $675,000 a year.

Mr. CEDERBERG. But the power benefits are twice the flood-control benefits.

Colonel WHIPPLE. Yes, sir.

General CHORPENING. I would like to amend one statement made there. I am not at all certain that you might not be able to justify a very much smaller project for flood control alone, but by including power, which is very well justified—it is a fine site—you get then a project that serves both of those purposes very, very well.

Mr. RILEY. I note the justifications say that this dam is in a general area of the large Army-Navy General Hospital at Hot Springs, Ark., the Naval Ammunition Depot near Camden, Ark., and the Munitions Plant at Pine Bluff, Ark. What benefit is this dam to those Government installations?

Colonel WHIPPLE. It has comparatively little direct benefit except in two ways: It does, of course, affect the supply of power for the area and those installations all do take considerable amounts of power which the Army has to buy. But I think probably more important is the possible recreational use for personnel in those facilities, particularly patients who may be allowed convalescent leave on this tremendous shoreline that is developed by a lake of this type.

Mr. RILEY. How far is it from Hot Springs?

Colonel WHIPPLE. It is 10 miles from Hot Springs.

FOLSOM RESERVOIR, CALIF.

Date	Unobligated balance	Unexpended balance
June 30, 1953	—$511,599	$2,995,091
Dec. 31, 1953	1,552,682	5,699,909
June 30, 1954 (estimate)	None	None

STATEMENT OF AVERAGE ANNUAL BENEFITS

The Folsom Reservoir will provide urgently needed protection to the city of Sacramento and adjacent metropolitan areas against floods on the American River and, in conjunction with a proposed 7-mile upstream extension of the existing right bank levee to about 10,000 acres of agricultural lands and suburban residential areas located on the right bank of the American River. Many industries, largely agricultural crop processing plants, are located in the area to be protected. The project will also prevent disruption of highway and truck travel between rail centers in Sacramento and adjacent military installations. It will also provide about 500,000 acre-feet of new water per year on the average. This water will be used approximately as follows:

	Acre-feet
Municipal use	44,000
Salinity repulsion	111,000
Irrigation use	345,000
Total	500,000

The project will also make possible the installation of about 160,000 kilowatts for the generation of about 500 million kilowatt-hours of electrical energy per year. This installation is being currently undertaken by the United States Bureau of Reclamation.

Average annual benefits from the project are estimated as follows:

Flood control	1, 630, 000
Irrigation	1, 600, 000
Municipal water supply	440, 000
Salinity repulsion	530, 000
Power	[1] 200, 000
Total	4, 400, 000

[1] This amount is equal to the annual charges for power facilities constructed by Corps of Engineers. Benefits creditable to power features which will be constructed and operated by the USBR are considered creditable to the USBR development.

Average annual charges: Average annual charges are estimated at $2,800,000.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Utility relocations, power distribution	$49, 100
(*b*) Construction of main dam, powerhouse switchyard and equipment	41, 460, 100
(*c*) Reservoir clearing, area "A"	353, 900
(*d*) Pumping-plant equipment	149, 100
(*e*) Gantry crane	204, 500
(*f*) Auxiliary dam	3, 673, 000
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955	None

Mr. DAVIS. The next project is Folsom Reservoir in California, with a total estimated Federal cost of $65,335,000. The appropriations to date, including $8,800,000 in the current fiscal year, have been $46,169,000. I note, however, that of that, $4.5 million represents a transfer from other projects.

We have before us a request for $14 million which will provide a total of 92 percent of the funding.

Apparently some things have been happening at this project since last year's hearing, including an increase in the cost estimate of almost $7 million. Will you tell us about the changes in the status of this project since the hearing of last year?

Colonel WHIPPLE. This project has been subject to some very severe construction difficulties, worse than in any other major project we have, during the past fiscal year.

As General Chorpening testified befor your committee last spring, a seam or fault was found underneath the left abutment of the dam. As it was relatively thin and not developed in prior explorations, it was necessary to stop work temporarily, go in and remove certain weaker material which was under the concrete monolith already poured and replace that material with concrete. That necessarily considerably interfered with construction operations, particularly as the trestle of the contractor was on some of the monoliths in question.

Those difficulties have now been completely overcome and we still hope to maintain the schedule which had previously been established, to start storing water on the project in January 1955 and have the power on the line in February 1955 from the powerplant being constructed concurrently by the Bureau of Reclamation. The cost estimate has increased, however, by reason of the various factors involved in this difficulty and for other reasons from $58,560,000 to $65,335,000. Those total differences amount to $6,775,000.

The first additional item is the one that many of our projects have, payment of resettlement costs under Public Law 534, which amounts to $150,000—a minor amount. The next item is a favorable one. We found by more close planning that the bridge relocation is no longer required and we reduced the cost estimate by $1 million. There were price level changes on work yet to be performed adjusted by some favorable bids that increased the cost by $1,814,000.

Then we have the principal work at the dam itself which amounted to an additional cost of $5,811,000 in total. This included $750,000 for a change in the design of the walls of the spillway basin to a gravity type, necessitated by a poor quality of rock; an item of $3,376,000, which is the principal one, for added contract costs of the main concrete sections of the dam, on account of this excavation, concrete backfill, and other surety measures required to eliminate that seam and make the dam sound; and additional grouting that was required beneath the main dam and side earth dams which amounts to a total of $951,000. As you were informed last year, the coffer dam failed in January of 1953 and in accordance with the contract a payment to the contractor was required of $500,000 which had been provided for in the event of failure of that coffer dam in the winter flood; there were some minor adjustments—I call them minor; they are not really so minor but in total the effect is not great—in quantities and prices of materials, which increased the estimate some $234,000, making up this main subitem on the dam itself of $5,811,000.

We have had a lot of trouble on this dam. These rock conditions were unsuspected and unfortunate, but I can say at the present time we have removed all of the poor foundations, we have the concrete poured for all of the monoliths and we feel the estimate still reflects sufficient contingencies to take care of what may eventuate from now on.

Mr. DAVIS. You do not figure there can be much more happen to upset the cost of the project.

Colonel WHIPPLE. Let us say we certainly hope we do not have any more serious cost changes.

General CHORPENING. I think it might be interesting to the committee if I would mention at this time that since we made the original borings here, which did not disclose this fault, we have developed, what we call a borehole camera which enables us to take photographs as deep as 300 feet in small boreholes, of the sides of the boring and, had we had such an instrument at the time we made the original borings, the fault would have shown up. With this instrument we are discovering foundation defects which just did not show up previously. It is now being used throughout the Corps of Engineers' activities, and I would like to discuss this a little more at a later time in this hearing.

This instrument we are very proud of and its use will result in substantial savings not only to us but to other Government agencies. It will be available, of course, to engineer and other contracting professions throughout the world.

Mr. DAVIS. This difficulty, then, has been entirely within the portion of the project being built by the Corps of Engineers.

General CHORPENING. That is correct, sir.

Mr. DAVIS. Now what has been the effect of those difficulties on your coordination in the construction of this project with the Bureau of Reclamation?

Colonel WHIPPLE. It has not effected in the end a material change. The Bureau of Reclamation is not affected by the cofferdam difficulty in any way that has materially held up their progress, since they had a separate cofferdam around the limited portion of the project where they are building the powerhouse.

As far as the dates are concerned, we have managed to recover sufficiently to be able to maintain the schedule close to the original dates. So provided they are able to keep up the schedule on the powerhouse, we believe we can have power on the line and the reservoir operative for that purpose at the date originally scheduled.

Mr. DAVIS. How do you stand on your financing of this project?

Colonel WHIPPLE. That is a major feature. Knowing that this was a project in which we were involved together with another Government agency and that was very important to the community in which it is being built, we have taken all possible available funds for other purposes from other projects to keep this construction going. We had appropriated this year $8,800,000; we have obtained from other sources a total of $7,800,000 to add to that, of which $4.5 million does not have to be reimbursed. That $4.5 million consists of $2 million which is surplus to Pine Flat Reservoir and $2.5 million which was collected from a considerable number of small uncompleted items corps-wide which had previously been reported as available balances. We have collected those amounts even though they represent in many instances work not yet accomplished. It will have to be accomplished in future years, but after conferences with the Bureau of the Budget it was considered we should use those funds rather than continue to hold them for work at some future time.

In addition to that are the loans to the project of $1.5 million which came from the Oahe Dam, Red River and the Algier cutoff; $1.5 million yet to be borrowed from Whittier Narrows and San Antonio; and $332,000 from other projects yet to be determined. These additional funds are required in order to keep up the schedule that is required during the current fiscal year, so as to meet the completion schedule for this project.

Mr. DAVIS. Did not I understand from you, General Chorpening, a couple of days ago in the discussion of the situation out in Los Angeles County, that at least half a million from that Whittier project was going to be used up in the way of the dam? Did you not tell us that?

General CHORPENING. That is correct. You will recall on Whittier Narrows I mentioned a letter from the Bureau of the Budget to reduce our request by $1,500,000 and that would be applied: $500,000 to Los Angeles in the fiscal year 1955, and $1 million on Folsom. So that the request now before the subcommittee is $15 million for fiscal year 1955, made up in that fashion. Some of the funds to keep this project on schedule have been actual savings on other projects where there will be no requirement for reimbursement; others have been loans which will be reimbursed out of funds we are asking to be appropriated for fiscal year 1955. So any loan from Whittier Narrows that went into Folsom this year would be paid out of funds made available in fiscal 1955. I will insert the letter in the record at this point.

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington 25, D. C., January 27, 1954.

The honorable the SECRETARY OF THE ARMY.

MY DEAR MR. SECRETARY: In a letter to this Bureau dated January 18, 1954, the Assistant Chief of Engineers for Civil Works, Corps of Engineers, requested that approval be granted to make the following changes in fiscal year 1955 allowances for projects under the appropriation "Construction, general":

Project	Approved allowance	Proposed revised allowance
Whittier Narrows Reservoir, Calif.	$5,000,000	$3,500,000
Folsom Reservoir, Calif.	14,000,000	15,000,000
Los Angeles County Drainage Area, Calif.	8,000,000	8,500,000
	27,000,000	27,000,000

You are advised that the Bureau of the Budget would interpose no objection to these revisions proposed by the Corps of Engineers.

A copy of this letter has been furnished to the Secretary of Defense for his information.

Sincerely yours,

ROWLAND HUGHES, *Deputy Director.*

Mr. DAVIS. I take it then you can assure us that you have gotten squared away on this project now so that you will be able to proceed at a good rate during the fiscal year 1955 and you will require this $15 million that you have submitted in the way of a request.

Colonel WHIPPLE. Yes, sir; we certainly will. And even with that $15 million we will still not be able to repay all of the loans until fiscal 1956.

General CHORPENING. However, we do not anticipate our inability to repay all of this is going to give us any serious financial or bookkeeping problems; is not that correct?

Colonel WHIPPLE. Yes.

BUREAU OF RECLAMATION PARTICIPATION

Mr. DAVIS. When you use that figure of the estimated Federal cost of a little over $65 million, does that include money the Bureau of Reclamation is putting into the project?

Colonel WHIPPLE. No, sir; it does not.

Mr. DAVIS. How much are they putting into it?

Colonel WHIPPLE. They are putting in something over $40 million.

General CHORPENING. Forty million dollars was the figure I recall last year, and I have no knowledge that that has been changed appreciably.

Colonel WHIPPLE. The total for power facilities is $45,149,000, which includes very close to $40 million worth of work being done by the Bureau.

General CHORPENING. Five million dollars, approximately, of that sum is what we are budgeting for, because we are doing it as part of our phase, and we have split the work in order to get the best possible construction program.

Mr. DAVIS. When you show a benefit-to-cost ratio of 1.06, that refers, then, to the completed project including the investment of the Bureau of Reclamation.

Colonel WHIPPLE. No, sir, it does not. In order to avoid difficulty, we have computed this benefit-to-cost ratio which does not include either the power benefits or power costs of the Bureau, except for the $5 million portion that is being constructed by us.

Mr. DAVIS. Do you have separate figures with respect to the Bureau of Reclamation portion of the project?

Colonel WHIPPLE. No, sir; we do not. Since there are sometimes minor differences in their computation of benefits and ours, we would not attempt to compute them ourselves for their portion of the project.

Mr. DAVIS. How did we get into this rather peculiar position with respect to this construction?

General CHORPENING. I believe that dates back to the time this project was authorized in October 1949.

This is the only project we have under construction where there is that division of responsibility.

I believe that the committee will recall our testimony in earlier years, that when this project is completed, it will be turned over entirely to the Department of Interior for operation. The function of the Corps of Engineers herein is only the design and construction of that portion of the project excluding the power facilities.

Mr. DAVIS. What happened, actually?

Did the Bureau of Reclamation and the corps get into a difference of opinion as to who should build it, and then Congress decided to compromise and let you both build part of it?

Is that about what happened?

Colonel WHIPPLE. The project was originally studied by the Corps, and comments were made by the State of California in 1946, in which they recommended a project of a different size and with a different installation of power. Then, in 1947, at the request of the Corps of Engineers, the State of California, and the Bureau of Reclamation appointed representatives to jointly restudy the program and suggest a proposal on which all three agencies could agree.

The recommendation at that time for a 1-million-acre-foot capacity reservoir was adopted by the Corps of Engineers, the Bureau of Reclamation, and the State of California.

After that, in 1948, the district engineer submitted a supplement to his 1945 report, bringing the data and studies up to date, recommending this 1-million-acre-foot capacity reservoir, and a 100,000-kilowatt power installation.

This plan was recommended by the Chief of Engineers in July 1948, and presented as House Document 367 of the 81st Congress, 1st session.

Then, Public Law 356, the authorization act, which was approved October 14, 1949, authorized a reservoir of 1 million acre-feet capacity for construction by the Corps of Engineers, and subsequently to be turned over to the Bureau of Reclamation for operation, with the reservoir to be incorporated as a unit in the Central Valley project.

At that time the hydroelectric power installation was authorized for construction by the Bureau of Reclamation.

Mr. DAVIS. Is not that rather unusual, where you have the Bureau already on the spot making a survey, for the Corps of Engineers to volunteer in attempting to develop a project at that site?

Colonel WHIPPLE. Sir, this project had previously been studied and recommended by the Corps of Engineers as an item for floodcontrol in the Sacramento Valley, in May of 1944. So, there is a long history of study of the flood-control potentiality of this watershed by the Corps of Engineers. It was actually authorized at that time for construction by the Corps of Engineers primarily as a flood-control project. This interest in power developed later.

So, it was not really a case of the Corps of Engineers coming into a plan that had been developed by the Bureau of Reclamation but, rather, a case of both agencies having active studies in the area. Of course, the project was initially authorized as a Corps of Engineers project.

Mr. DAVIS. I do not suppose that is the most economical way to get these things done; is it?

General CHORPENING. Other things being equal, it is better for one agency of either the Government or private enterprise to do all of the work on one project.

I am sure that there were what appeared to be very compelling reasons that were presented to the Public Works Committee, and to the Congress, at that time, that caused them to make that decision, sir.

Mr. DAVIS. I do not know how compelling the reasons were, but it looks as if it is one of those compromises that probably pleased no one.

Mr. HAND. Actually, then, including the amount of money which will be spent by the Bureau of Reclamation for the installation of power equipment, and so forth, the United States is spending about $110 million on this project; is that right?

Colonel WHIPPLE. About $105 million.

Mr. HAND. There are no figures presently available to us as to what the Bureau of Reclamation estimates to be the benefits from the amount of money that they have or will spend; is that correct?

Colonel WHIPPLE. We do not have them here; no, sir.

IRRIGATION BENEFITS

Mr. HAND. Except for the power which is in the hands—or will be in the hands—of the Bureau of Reclamation, what other benefits are there other than flood control and irrigation? Is irrigation a principal benefit here?

Colonel WHIPPLE. Yes, sir; it is. The average annual benefits in addition to flood control, include irrigation in the amount of $1.6 million, municipal water supply in the amount of $440,000, and salinity repulsion in the amount of $530,000. Those are the three benefits, in addition to the flood-control benefit.

The flood-control benefit is in the amount of $1,630,000.

Mr. HAND. What is proposed to be done in connection with the irrigation benefits, and the municipal water supply? Are we selling those benefits, or is the Bureau of Reclamation selling those benefits to the localities involved?

General CHORPENING. I think when this is completed that the entire administration of the project, including the irrigation and the municipal water supply, will be a function of the Interior Department.

Colonel WHIPPLE. That is correct.

Mr. HAND. I hope there are no other agencies of the Government who are contributing a few hundred million more to this project. There is nothing else involved here except yourself and the Bureau of Reclamation?

Colonel WHIPPLE. No, sir.

TRANSFER OF FUNDS

Mr. HAND. In addition to the $8.8 million which was allowed last year by this committee, it is my understanding that you have transferred from other funds—some to be retained and some to be repaid—in the amount of about $7.8 million; is that correct?

Colonel WHIPPLE. Yes, sir.

Mr. HAND. So, then, actually last year, despite the appropriation of $8.8 million, you have available in excess of $16 million. Do I understand that correctly?

Colonel WHIPPLE. That is for the current year; yes, sir.

Mr. HAND. Fiscal year 1954?

Colonel WHIPPLE. Yes, sir.

Mr. HAND. To the extent that you are permitted to make these transfers of funds and to search your purse and many other projects, and to take money from them and put in this project to be repaid or to be retained, the appropriation allowed by this committee is unrealistic; is that not so?

General CHORPENING. Except with this respect, sir: That we use, as testified here during the hearings, that authority very sparingly and, in nearly all these projects, except in a very minor percentage of the cases, we are using the funds as appropriated by the Congress.

We feel that this is one of those instances where it was proper and wiser for us to use this authority, and we have, as has been earlier stated, by Colonel Whipple, carefully cleared this with the Bureau of the Budget so they would know what we were doing, and we are giving here a very full statement on what we have done.

As has been brought out, much of this additional money was saved from our other projects.

Mr. HAND. But that savings, if the committee had examined those projects, and said "Oh, fine; we are going to have some savings on these projects which may revert to the Treasury"—although, of course, that would be a rather poor hope, I suppose—to that extent we would have been disappointed because that money was all transferred to this project, or at least to the extent of $7.8 million?

General CHORPENING. On the other hand, without that we would have had very serious delays in a program we are coordinating with another agency of Government, and wherein scheduled progress would not be available, which would result in loss of revenue by the Government from the benefits to be secured through this project.

Mr. HAND. Well, of course, you have said, and I take it that it is right, Colonel, that this authority which you have is normally used sparingly, but in this case of course you used it to the extent of about 100 percent of the appropriated funds. You virtually doubled your appropriated funds?

Colonel WHIPPLE. That is correct.

Mr. HAND. Did you clear those transfers and that doubling of the amount available for 1955 with anyone else except the Bureau of the Budget?

General CHORPENING. I do not believe so; no, sir.

Mr. HAND. Is it not true, General, that in an instance like this, at least, our appropriations for fiscal year 1954 were wholly unrealistic?

General CHORPENING. That is correct. In the last year that I testified, I did advise the committee that we were having trouble, and I honestly did not believe, and we did not realize that the trouble was going to involve us in as many financial difficulties as resulted.

We had to open it up and discuss it last year before we had seen what the problem really involved. Had I known at that time what it was going to involve, I would have certainly fully informed this committee. It became a graver problem than we at that time anticipated.

Mr. HAND. Because those troubles were not fully anticipated, it is true, as a matter of fact, that this committee had no knowledge or warning that an additional $8.8 million which we had appropriated would be virtually doubled by this interbudgetary transfer? Is that correct?

General CHORPENING. That is correct; yes, sir.

TOTAL PROJECT COST TO FEDERAL GOVERNMENT

Mr. RABAUT. What is the total sum of money that the Government has in this project?

Colonel WHIPPLE. Unexpended?

Mr. RABAUT. The total estimated cost? I notice here, of course, the total estimated cost is $65 million, but what other money was placed in this by any other department of the Government?

Colonel WHIPPLE. The total estimated cost is about $105 million, out of which at the end of the current fiscal year we will have expended or obligated, something over $45 million.

Mr. RABAUT. I note you have set up your average annual benefits on an estimate of $4.4 million?

Colonel WHIPPLE. Yes, sir.

Mr. RABAUT. What is included in that benefit?

Colonel WHIPPLE. That total benefit is exclusive of almost all the power benefits to begin with. It is not the total benefit to the project. Those benefits correspond to the $65 million which are being expended by the Corps of Engineers.

Mr. RABAUT. So, this benefit sum here is not related to this total estimated Federal cost as set forth in justifications?

Colonel WHIPPLE. Yes, sir.

Mr. RABAUT. The recognized figure here in the establishment of the ratio of the average annual benefits to the average annual cost is 1.6 to 1?

Colonel WHIPPLE. Yes, sir.

Mr. RABAUT. You do not anticipate further trouble here, do you?

Colonel WHIPPLE. No, sir; we do not. However, that estimate does still include a contingency factor, and we believe that that estimate will be sufficient to complete the project. The stage of development now is such that, as one of our engineers expressed it when I was talking to him, "It has now become a manufacturing job

more than anything else." It is a question of pouring so much concrete and installing so much steel.

But the foundation problems that have given us all the trouble—that and the river-diversion problem—no longer bother us, because the concrete is above the river.

Mr. RABAUT. Are these other percentages firm, then, that you had, like this land acquisition, 86 percent complete; relocations, 85 percent; reservoir clearing, 23 percent; dams, 66 percent; tailrace, 70 percent?

Colonel WHIPPLE. Yes, sir; those are the percentages as of the present time.

Mr. RABAUT. They are not the percentages that are included in the request for fiscal 1955 funds?

Colonel WHIPPLE. No, sir.

Mr. RABAUT. Those are the percentages as of today?

Colonel WHIPPLE. Yes, sir.

Mr. RILEY. What is the total additional cost of the project?

Colonel WHIPPLE. The total additional increase in cost of the project is $6,775,000, but the amount to the main dam itself—which was almost entirely due to the fault—was $5,811,000.

Mr. RILEY. Was the other due to the diversion trouble that you had with the river?

Colonel WHIPPLE. That was $500,000 due to the diversion trouble in the river. $234,000 was due to quantity changes, and $750,000 was due to the change in the design of the wall adjacent to the spilling basin, which may be in some respect traceable to the fault. It represents the same foundation difficulty, although it is not so much the fault itself as the adjacent rock.

So, the fault itself caused an expenditure of $4.5 to $5 million, depending on whether you included the stilling basin wall as part of the fault or not.

Mr. RILEY. The additional cost of the dam is $5,811,000 including everything; is that correct?

Colonel WHIPPLE. Yes, sir; that is on the dam itself.

Mr. RILEY. Colonel, I believe you testified that the additional cost on account of the uncovering of the fault under the dam of $5,811,000 still leaves the benefit-cost ratio at 1.6 to 1?

Colonel WHIPPLE. Yes, sir.

Mr. RILEY. What was it before? What was the cost to benefit ratio before that additional cost came into the picture?

Colonel WHIPPLE. I understand that it was about the same thing.

Mr. RILEY. So, there has been very little change in the benefit-to-cost ratio? How has this additional cost been allocated? Is it allocated to the irrigation benefits or to the power benefits, or what?

Colonel WHIPPLE. Well, sir, the final cost allocation on this project has not been made. I am sorry; I misunderstood your question.

The principal change since last year has been the increase in flood-control benefits on account of the changes which have been made in all our projects. We have changed the system of using so-called projected prices for the computation of benefits, as I believe has been explained to you previously in connection with flood-control projects.

That is the principal item that has been changed since last year.

Mr. RILEY. In other words, most of this cost increase will be charged to flood-control benefits?

Colonel WHIPPLE. It corresponds to flood-control benefits, sir, but we would have to compute a final cost allocation, which will be done later by the Bureau of Reclamation, before it can be decided upon exactly where the various amounts of the cost of the project will be charged.

Mr. RILEY. Under the formula that you have set up would any part of it be charged to power production?

Colonel WHIPPLE. Yes, sir; a part of it probably would be charged to power because this dam is a joint proposition, and because there is no portion of the dam that we can say corresponds to flood control rather than power, with the capacity of the dam being used for all of the purposes jointly.

Therefore, an increase in the cost of the dam would have to be prorated among the various functions of the project. So that, undoubtedly, part of this increase in cost will be prorated to power, as well as to irrigation and flood control.

Mr. RILEY. It is the purpose of the engineers, then, to prorate the cost among the various project benefits—reclamation, flood control, and power?

General CHORPENING. Very definitely so, and at the present time we are in the midst of discussions with the Secretary of the Interior and the other Secretaries, and their staffs, in connection with that very problem.

JIM WOODRUFF LOCK AND DAM, FLORIDA

Date	Unobligated balance	Unexpended balance
June 30, 1953	$391,125	$3,294,722
December 31, 1953	2,498,646	6,210,205
June 30, 1954 (estimated)	210,300	1,956,100

STATEMENT OF AVERAGE ANNUAL BENEFITS [1]

Navigation: Provision of a transportation facility for low-cost water shipments with transportation savings of	$1,935,000
Flood control: Protection from devastating floods in the Chattahoochee River Valley	215,000
Power: Average values used for capacity and energy are $18.60 per kilowatt of capacity and 2.77 mills per kilowatt-hour of energy	7,585,000
Other: Public use	50,000
Total benefits [1]	9,785,000
Average annual charges [1]	8,415,000

[1] Benefits and charges are for the Apalachicola, Chattahoochee, and Flint Rivers improvement, of which Jim Woodruff Dam is an integral part.

Data on continuing contracts

Continuing contracts in force:	Estimated contract earnings
Clearing contract, parcels 2, 3, 5, 6, and 7	$2,200,000
Construction of dam, lock, powerhouse, switchyard, storing generators, installing equipment, lock approach channel	15,451,300
Governors	120,600
Turbines	1,660,200
Generators	1,473,800
Main station service switchboard	46,300
Distribution switchboard	28,400
Electric auxiliaries	74,800
Oil-circuit breakers	75,000
Transformers	133,400
Main switchgear	146,900
CO_2 system	8,900
Rake, hoist, and car	89,000
Elevator	19,600
125-ton crane	100,200
75-ton gantry crane	597,500
Proposed in fiscal year 1954 but not yet in force: Clearing debris from sale of timber, parcels 4 and 8	179,000
Proposed in fiscal year 1955:	
Clearing contract, parcels 4 and 8	1,254,900
Machine-shop equipment	43,000

Mr. HAND. The next project is the Jim Woodruff lock and dam in Florida, where the total estimated cost is $46,379,000; the total appropriations through fiscal 1954 have been $38,763,000, and the amount requested before us now in fiscal 1955 is $6 million, which will bring the funding to 97 percent of completion.

The balance to complete after fiscal year 1955 is estimated at $1,616,000.

Although the committee is generally familiar with this project, I think it would be helpful for you to state briefly, again, for the record, the general nature of the project, and its location.

Colonel WHIPPLE. The Jim Woodruff lock and dam is a multipurpose navigation and power project, on the Apalachicola River just below the confluence of the Chattahoochee and the Flint Rivers, which form the Apalachicola at that point.

The reservoir will extend 47 miles up the Flint River to provide navigation to Bainbridge, Ga., and 52 miles up the Chattahoochee, extending as far as Columbia, Ala.

It will form a link in the navigation of the Chattahoochee and the Flint Rivers, to provide a 9-foot channel depth to Columbus, Ga., and Bainbridge, Ga., respectively. It is also related to these other upstream projects at Buford, Fort Gaines, and Columbia, which form a multipurpose improvement, together with Jim Woodruff, for power and some flood control in addition to navigation.

Mr. HAND. The Jim Woodruff project, of itself, is a power project and a navigation project?

Colonel WHIPPLE. Yes, sir.

Mr. HAND. Of itself, it has no other benefit?

Colonel WHIPPLE. That is correct, sir.

Mr. HAND. But it is integrated with another system which, among other things, will involve some flood control?

Colonel WHIPPLE. Some flood control; yes, sir, and will by their operation increase the power output at Jim Woodruff after they are constructed.

Mr. HAND. This provides navigation from where to where, Colonel?

Colonel WHIPPLE. It provides navigation from the gulf up the Apalachicola River to the Flint River, to Bainbridge, Ga., and up the Chattahoochee as far as Columbia, Ala., where the next dam is to be built.

Mr. HAND. What is the navigable character of those streams now, if any?

Colonel WHIPPLE. The present navigation depths are about of a 3-foot depth up as far as Columbus, Ga., and about 2.5 feet to Bainbridge, Ga.; in other words, they are not really suitable for commercial navigation of any magnitude at this time.

Mr. HAND. Is there, in fact, any navigation on those streams with a 2- or 3-foot depth?

Colonel WHIPPLE. There usually is some, even on streams of that depth.

Mr. HAND. What, generally speaking, will these streams carry in the way of traffic, and cargo, if and when, improved to the proposed 9-foot depth?

Colonel WHIPPLE. There is a prospective commerce estimated at 409,800 tons, which is expected to consist of cotton, salt, petroleum products, sugar, iron, and steel. There will move up the Flint River petroleum products to Bainbridge, to oil refineries. In addition, there will be a large movement of coal for a steam-electric plant that is being built near Chattahoochee, Fla.

Mr. HAND. What is the approximate length of the navigable waterway which will be given the area with the completion of this project?

Colonel WHIPPLE. This project will provide navigation 47 miles up the Flint River, and 52 miles up the Chattahoochee River.

BENEFIT TO COST RATIO

Mr. HAND. Is there any division now available to us between the navigation feature of this project, and the power feature?

Colonel WHIPPLE. Do you mean in terms of costs, sir?

Mr. HAND. Yes; benefit-to-cost ratio?

Colonel WHIPPLE. Yes, sir; I will have to give you the benefits of the whole system of four dams, because due to their related nature, the benefits have not been segregated.

The benefit for navigation is computed at $1,935,000 annually; for flood control $215,000 annually; power, $7,585,000 annually, and public use, the nominal amount of $50,000.

Mr. HAND. That is for the whole system?

Colonel WHIPPLE. That is the whole system. For the system as a whole, power is something over three-fourths of the total benefit.

Mr. HAND. Power will be three-fourths of the benefits to the system as a whole?

Colonel WHIPPLE. Yes, sir; and navigation is the next most important benefit.

Mr. HAND. What benefit does this project have standing by itself without relation to the other projects?

Colonel WHIPPLE. We have not computed a separate benefit because the navigation, particularly, would be of less than its full value prior to the completion of the other dams in the system.

I can give you, however, the amount of power produced. This project will have 30,000 kilowatts of installed capacity which will provide 16,500 kilowatts of firm power initially, and ultimately 21,500 when the storage becomes available upstream. It will produce 212 million kilowatt-hours annually of electric power.

Mr. HAND. The benefit-to-cost ratio of the entire project, I think, has been stated as 1.16 to 1; is that correct?

Colonel WHIPPLE. Yes, sir; that is correct.

Mr. HAND. What, generally, do you propose to do with the $1,616,000 which you asked for in fiscal year 1955?

Colonel WHIPPLE. The greater part of that money will be devoted to completion of the construction of the powerhouse. The three units of the project are expected to come on the line early in 1955, and the completion of the powerhouse itself and the payment of final invoices on the generators, turbines, and other electrical equipment will be by far the greater part of the expenditure projected for fiscal year 1955.

In addition to that, there is a small amount of clearing that still has to be done, and a little work remaining in the overflow section of the dam.

Mr. HAND. Generally speaking, what is your financial picture? Do you expect to spend more money than you are now seeking by reason of any unobligated balances, or by any contemplated transfers?

Colonel WHIPPLE. No, sir; we do not. There are no outstanding loans to or from this project, and we expect the unobligated balance to be down to approximately $210,000, by the end of the current fiscal year.

Mr. HAND. You do not contemplate any transfers from other projects; do you?

Colonel WHIPPLE. No, sir; we do not.

Mr. HAND. The Bureau of Reclamation or no one else is involved in this? So, in this instance we are looking at $1.6 million balance, or rather, $1,616,000, approximately, speaking?

Colonel WHIPPLE. Yes, sir.

CONTINGENCY FUNDS

Mr. HAND. What about your contingency items here, Colonel?

What is the present extent of it, and what is the need for it to be still carried in view of the fact that we are almost complete here, or will be at the end of fiscal year 1955?

Colonel WHIPPLE. There is about $1.1 million that is remaining for contingencies, sir, but in view of the fact that we still have some work to do this year, in addition to next year, of course, we consider that amount to be normal.

That includes provision for certain clearing that was referred to in last year's testimony which at that time we thought we would probably have to do.

We think now that we may not have to do all of that clearing. In fact that probably we will not have to do the greater part of that, but until the States concerned have come to a final agreement, I cannot say.

Mr. HAND. There is a probability that out of that contingency we can save a substantial amount; would you say?

Colonel WHIPPLE. Yes, sir, there is.

Mr. HAND. If you save it, will you give it back to us, and not transfer it to some other item?

General CHORPENING. Perhaps, we should ask General Itschner to answer that one, sir.

Colonel WHIPPLE. The full amount of funds required to complete the project is still $1,600,000. However, if we make a lot of money on the contingency items, it can be expected that we will not ask for as much money next year.

Mr. HAND. You would reduce that request? That would be very nice, indeed.

What is the proposed obligation of funds after fiscal 1955?

Colonel WHIPPLE. After fiscal 1955 the principal item set up is this clearing that I have already mentioned, and I hope we will not have to do that. There is a minor amount of—I should say—a fair amount of grouting to be done and installation of recreational facilities, which we always leave until the last.

That is not general recreation throughout the reservoir area, but it is mainly in the immediate vicinity of the dam itself. There is a large area which will attract the public and which is suitable for development and accommodation of a great number of visitors that will come to a project such as this.

Mr. HAND. Do you feel that you are going to have to spend very much money on your reservoir clearing?

Colonel WHIPPLE. No, sir; we have spent a gread deal of money on the reservoir clearing. The total project cost estimated for clearing is $5,381,000. However, there is slightly over $1 million in this clearing that has been at issue for over a year on account of its relationship to the various types of mosquitos that grow in this area, and there is a question as to whether it is safe from a sanitation point of view, to leave uncleared certain heavily wooded areas which will be flooded due to the operation of the reservoir.

We have been in prolonged negotiations with the health departments and the governors of the three States. We have attempted to avoid clearing that will unduly run up the cost of the reservoir, but at the same time we felt that we must consider the health requirement, which involved not only malaria mosquitos, but in this case a type of mosquito which spreads encephalitis. It has required a great deal of discussion. We have held off this clearing until the final decision is made, and we hope we will not have to do a substantial amount of the part that is now scheduled for 1956.

RECREATIONAL FACILITIES

Mr. HAND. What funds do you expect to spend for recreational facilities, and what is the general nature and extent of the recreational facilities which you expect to develop there?

Colonel WHIPPLE. There is $121,500 scheduled for recreational facilities. Initially there will be merely minimum provision of sanitary facilities in the area adjacent to the dam. Later on, it is expected to provide picnic spots, parking areas, access roads, probably, and a view area with guardrails, and that sort of thing, and a minimum amount of landscaping in this area adjacent to the dam.

Mr. HAND. Are the local areas participating in any way in any part of this construction, or in the proposed construction of recreational facilities?

Colonel WHIPPLE. Bearing in mind that the reservoir has 2 arms which total about 100 miles in length, anything throughout this reservoir except immediately adjacent to the dam would have to be done by local interests if recreational facilities are to be provided.

Mr. HAND. But in the immediate vicinity of the dam, whatever is proposed is proposed to be done entirely at the expense of the United States Government; is that correct?

Colonel WHIPPLE. Yes, sir.

General CHORPENING. I would like to make clear that in this year's request there is only $15,000 included which is for what we consider minimum sanitation requirements at the project, and the other amounts, as we have indicated here all through these projects, are in a suspended status. Under the present criteria we are not asking for funds to pursue the development of those facilities, but at some future time, it is entirely possible that some of those would be requested.

Mr. HAND. I am asking you these questions now because if you are safe in your contingencies and do not ask us for any funds next year, you can go ahead and build these without talking to us about them.

General CHORPENING. We cannot do that, because we have an overall directive from the Bureau of the Budget that none of those are to proceed, and we would not, sir—I want to make that very clear—we would never go ahead with the transfer of any funds or funds appropriated into any new parts of these projects that have not been previously testified about here.

We would never make that application of these funds.

LAND ACQUISITION

Mr. HAND. Will you tell us the status of your land acquisition there? Are we almost complete? Do we have all the land we need, or is there still some pending?

Colonel WHIPPLE. The land acquisition is essentially complete. There are still a few pending cases that are in court. We have had some developments in regard to the land acquisition which we had not previously anticipated. There have been some changes in the last year, and we have had a lot of discussion of oil rights, mineral rights, and we have allowed the people concerned, who objected, to retain mineral rights to areas adjacent to the reservoir, even though there was no evidence that we could find that those mineral rights were worth anything.

Mr. HAND. Do you have any problems in connection with land acquisition now?

Colonel WHIPPLE. The only problem we have in connection with land acquisition is that we are applying our new real-estate policy to this project, and reducing the amount of land. The amount of fee taking has recently been reduced by 2,600 acres, with a corresponding increase in the amount of easement taking.

Even though the land acquisition was almost complete, it was possible to change the taking line in a sufficient number of cases to make up that difference.

Mr. HAND. Are you saving any substantial amount of money by not taking in fee and taking the easements in lieu of the fee under the new policy?

Colonel WHIPPLE. I think it is too early to evaluate that on this project. The amount of savings, undoubtedly, would not be very large on account of the relatively small amount of land involved.

Mr. HAND. If you have recently applied your very new policy concerning land acquisition, does not that indicate that you still are not finished with your land acquisition?

Colonel WHIPPLE. Yes, sir; we still have some land acquisition to go.

Mr. HAND. Will you tell us about that, briefly?

Colonel WHIPPLE. There is $76,900 set aside for completion of land acquisition in fiscal year 1955, which is almost entirely for clearing up cases that are still in the courts.

Mr. HAND. You have virtually no lands which are subject to negotiation, between the Corps of Engineers and the people?

What is still outstanding is in court for condemnation purposes?

Colonel WHIPPLE. Yes, sir.

Mr. HAND. It is really not your problem any more, but is a problem of the Department of Justice?

Colonel WHIPPLE. It is not entirely, sir. We have arrangements with the Department of Justice whereby we can stipulate any reduction in taking, even though the case is still in court, and we are doing that in a great number of cases, countrywise; it is a standard procedure.

Mr. HAND. That results in a reduction of fee taking and taking easements instead of reduction of acquisition of any territory?

Colonel WHIPPLE. Either one. The Department of Justice will allow a stipulation to be made ordinarily in those cases that are, of course, agreeable and desirable to the other side. In those cases, such matters can be entered by stipulation, and we can still save the taking of that land.

Mr. HAND. But all, or virtually all of the land still to be taken, either by fee or easement, is in the courts; is that correct?

Mr. WHIPPLE. Yes, sir.

Mr. DAVIS. Last year, General Chorpening, we discussed the foundation conditions there about which there had been some controversy. What can you tell us about that?

General CHORPENING. We are out of any difficulty on the foundation conditions there, because all of the construction work there now is above ground and that is eliminated. We did have in connection with this construction some very difficult foundation conditions to overcome; that is right.

BENEFIT-COST RATIO

Mr. DAVIS. The benefit-cost ratio has been reduced for this system from the 1.21 to 1, at the time of the presentation last year, to 1.16 to 1 this year. Will you explain that for us?

Colonel WHIPPLE. The benefit-cost ratio on this system, on account of the costs, has had to be reevaluated. We have had, as was testified last year, to change the project, so that the future Fort Benning Dam is no longer to be built, and is to be replaced by the Columbia Dam, and the upper Columbia by Fort Gaines, so that the cost factor has been changed. And in connection with that we have

completed a reevaluation of the benefits and somewhat increased the navigation benefits.

The power benefits, on the other hand, have been considerably reduced based on changed value of that power as computed by the Federal Power Commission. The overall change has been a reduction in benefits from $10,393,000 annually to $9,785,000 annually. And for that reason, the change in cost estimates carries a somewhat reduced benefit-cost ratio.

Mr. DAVIS. This project has had a history of rather large unexpended balances from year to year. Are you now ready to proceed at a rate that will clear that up?

Colonel WHIPPLE. I think we are, yes. Our current estimate is that the unobligated balance will be $210,000 by the end of the fiscal year, and we expect an unexpended balance of about $1,900,000. We think there is no substantial danger of any further difficulties unless it would be of a coffer dam failure; and that, of course, is a chance that the contractor is taking. If that coffer dam work goes on satisfactorily, we think we will use up the funds satisfactorily.

Mr. CEDERBERG. General, am I correct in assuming on a project of this size and type, where we have the production of power involved, that there is going to be no request for any regulating dams to supplement these dams?

General CHORPENING. No reregulating dam on this project.

Mr. CEDERBERG. Are we going to find ourselves in the position, in a matter of a few years where, after the project is completed and in operation, that it will be necessary to install in the area a steam plant to assure a steady flow of power in the event these hydroelectric power dams cannot assure that flow of power?

General CHORPENING. There is no contemplation of anything of that sort on the part of the Corps of Engineers.

Mr. CEDERBERG. We found ourselves with that situation in the TVA, where the project was sold on the hydroelectric basis, and now we are faced with several requests for steam plants in the area. I am just wondering if there is not some parallel to that situation in this project?

General CHORPENING. In the instances of projects that the Corps of Engineers has developed, as you can appreciate, all of the responsibility by law for the sale of that power is with the Department of the Interior, which is the marketing agency, as contrasted to the Tennessee Valley Authority. The Tennessee Valley Authority builds hydroelectric projects but likewise has a responsibility for the marketing of that power, and also, as you know, their laws are very much broader, the responsibility and authority is broader than ours.

But as far as the Corps of Engineers is concerned, we have no idea of any request for steam power now, nor would we under any authority we now have from the Congress.

Mr. CEDERBERG. But there is a distinct possibility there, I would assume, that the marketing agency may say, well now, we are faced with a situation where these dams cannot provide a steady flow of power, due to the water conditions, and so forth, and in order to properly supplement that flow of power, we have got to put up a steam plant in this area.

General CHORPENING. I think not. I can recall no instance where the Interior Department, as such, has asked for funds for the construction of steam plants.

Mr. CEDERBERG. I hope they never will. But I am just a little concerned that that might be a possibility, and that we may be asked for some supplemental funds to meet a situation, such as a steam plant to be sure that they did have the power in steady flow.

WATER STORAGE

Mr. RABAUT. What is the storage, in acre-feet, of the water in this reservoir?

Colonel WHIPPLE. There is 37,000 acre-feet of pondage available simply for daily fluctuation for the power output.

Mr. RABAUT. What was the term you used?

Colonel WHIPPLE. Pondage.

Mr. RABAUT. Do you have figures that would show the length of the shoreline of this reservoir?

Colonel WHIPPLE. Yes, sir.

Mr. RABAUT. What is the total shoreline?

Colonel WHIPPLE. The reservoir as a whole will contain 385,000 acre-feet, but in order to use the navigation pool, it would be kept close to the maximum elevation at all times, and these small variations are going to be carried out, so that generally speaking, this project will have a stable shoreline and a constantly existing head of water.

Mr. RABAUT. What is the length of this shoreline?

Colonel WHIPPLE. It is several hundred miles. I do not have the exact figures.

Mr. RABAUT. My reason for asking you this question is that we have got a new land-acquisition policy. In some instances we take the land in fee. That is correct; is it not, General?

General CHORPENING. That is correct.

Mr. RABAUT. Now your policy will be to take easements along the reservoir area.

General CHORPENING. However, we are still taking all of the land in fee that is going to be covered by water in this case, because there is no flood control involved in this reservoir.

Mr. RABAUT. You will take all of the land in fee that is covered by the water down below.

General CHORPENING. In case of flood-control reservoirs we are now proposing to buy in fee only the land up to the 5-year flood frequency.

Mr. RABAUT. Yes.

General CHORPENING. But in this instance, where there is no flood-control storage, we would buy in fee up to the top of the power pool.

Mr. RABAUT. Now, when you take this land under easement, should it be the obligation of the Government to build the access roads?

General CHORPENING. Yes; we should build some access roads, at least, where it is essential, as a part of the operation of the reservoir for the primary purpose of getting to the shoreline to take care of the accumulation of drift.

Mr. RABAUT. I know what the purposes of the act are, but I am just wondering about whether we are giving the benefits to private

industry, and private industries of the shoreline. We are going to take over the obligation of the access roads, to keep the shoreline in shape, and to keep the debris out of the pool or the tributaries, but at the same time, it is a benefit to the people who have the rights of the shoreline, and here we have the expense of the access roads.

General CHORPENING. We will have to have the access roads for our own operations. We could not properly operate the reservoir without a minimum number of access roads.

And here in this reservoir, where there is no flood control, the Government will own the land in fee simple, that is, the land to the normal pool elevation. We will own that land.

Mr. RABAUT. You will own the land to the normal elevation.

General CHORPENING. To the normal pool elevation, yes.

Mr. RABAUT. What is the land involved; how do you describe the land where you only have an easement over it?

General CHORPENING. That is the land which is above the normal pool elevation of a 5-year flood level; that is in the case of flood-control dams.

Mr. RABAUT. That is land that is occupied.

General CHORPENING. That is land that is occupied.

Mr. RABAUT. This is land that is occupied, and this will be available for recreational purposes and such uses as land is normally put to in such conditions.

General CHORPENING. Of course, we will not allow any habitation in such land, that is, land that may be flooded; there will be no houses, and they cannot be put there, and people cannot leave the houses that are now there in place; they must be removed. We cannot permit habitation of the land required for the proper operation of the reservoir, that might be flooded.

Mr. RILEY. Pursuing the land policy a little further, do these easements protect the Government from any liability in cases of debris washing up on the shoreline, and so forth?

General CHORPENING. Yes, sir.

BUFORD DAM, GA.

Date	Unobligated balance	Unexpended balance
June 30, 1953	−$228,039	$835,384
December 31, 1953	4,549,025	6,577,257
June 30, 1954 (estimated)	0	1,850,700

STATEMENT OF AVERAGE ANNUAL BENEFITS [1]

Navigation: Provision of a transportation facility for low-cost water shipments with transportation savings of	$1,935,000
Flood control: Protection from devastating floods in the Chattahoochee River Valley	215,000
Power: Average values used for capacity and energy are $18.60 per kilowatt of capacity and 2.77 mills per kilowatt-hour of energy	7,585,000
Other: Public use	50,000
Total benefits [1]	9,785,000
Average annual charges [1]	8,415,000

[1] Benefits and charges are for the Apalachicola, Chattahoochee, and Flint Rivers improvement, of which Buford Dam is an integral part.

Data on continuing contracts

	Estimated contract earnings
Continuing contracts in force:	
Sluice lining and power tunnels	$569,200
Gates	191,000
Hoists	164,800
Sluice outlet works and intake structure	3,664,300
Headgates	238,300
Turbine unit 3	212,000
Turbine units 1 and 2	1,224,300
Generators, 3 units	2,522,000
Proposed in fiscal year 1954 but not yet in force:	
State roads	6,907,800
County roads	2,043,800
Utilities, powerlines	1,078,900
Nonoverflow section of dam	3,387,300
Proposed in fiscal year 1955	None

Mr. CEDERBERG. The next project is the Buford Dam, Ga., having a total estimated cost of $41,981,000. The appropriation to date has been $13,681,000, and the request for 1955 before us at the present time is $5,800,000, which, if granted, will bring the balance to complete after this fiscal year 1955, $22,500,000.

General, would you advise the committee as to the present status of this project, the reason for any balances that you may have, and what the funds are to be used for?

Colonel WHIPPLE. This project is just entering into its most active phase of development. The dam is of a rather unusual type; it is an earthen dam, with powerhouse and sluices in a very deep rock cut; spillways are completely offchannel, some distance from the dam, and then there are several dikes around the lower edges of the reservoir.

The construction of the spillway and the access roads, as well as the excavation of the rock cut is entirely complete. The headgates, the stop logs, and trash rack is 30 percent complete. The turbine and generators have been designed, although construction has not started. The power intake structure is very large, and rather expensive, and the contract was let to start in December of this past year.

There is an unusually tight construction schedule for this project. We have already let the contract to start work on the construction of the main dam, and it is essential and necessary that we push that construction of the main dam to its maximum, in order to complete it up to the safe height ahead of the flood season.

The relationship between the various phases of the project is quite complex in this case. The amount we have requested for the fiscal year 1955 will continue work on the land acquisition, start major construction on road relocations, which are very extensive on this project, as well as relocations of powerlines. There are some 126 miles of powerlines to be relocated.

The outlet works and the power intake will have to be continued in order to tie in with the general schedule and work installing the generators. The major objective for this next year, however, is to get the earthen dam up to a sufficient height to make it safe in case of an overtopping, which, as you know, could not only cause damage to the dam, but cause considerable danger downstream.

RELOCATIONS

Mr. CEDERBERG. Then, as I understand the reason for your balance this year, or the major reason is the matter of the relocation of the highways, bridges and utilities; is that correct?

Colonel WHIPPLE. That is correct. We have had some negotiations on the relocation contracts with the State of Georgia, on highways, and we had hoped that the State would undertake the relocation and then would be reimbursed by the Government in a lump sum. It has been found, however, that this is not a feasible thing for the State, and we must have a number of construction contracts to carry out that work.

Also, the Georgia Power Co. has found they need some detailed maps before they will agree on the exact relocations of the powerlines, and that has delayed several months.

Mr. CEDERBERG. Are these delays you speak about, of relocation, the reason why you have had occasion for delaying the power by a year or so?

Colonel WHIPPLE. No, that is not the reason. The delay in power is due to restriction of the amount of funds requested for the fiscal year 1955, which will not support a schedule to meet completion by that time.

Mr. CEDERBERG. If you had the money, in view of the problems of relocation, could you still get the power on the lines?

Colonel WHIPPLE. Yes, we could, as the construction of the main dam which is the key will proceed at the same pace, on account of the danger of overtopping that I have described. The lack of funds to prosecute the other portions of the project, makes it impossible to put the power on the line.

INCREASED COST

Mr. CEDERBERG. There is an increased cost in the project of $968,000. Will you advise the committee as to the reason for that increase?

Colonel WHIPPLE. There are two principal items in that: The first is the resettlement costs that this project now will have to pay. There are a good many people in that area and that resettlement cost will amount to $428,400.

There also have been some fairly substantial increased rock costs, due to slides. The rock in that area is granite, and deep rock seams were encountered, which caused this in both the upper and lower cuts.

In addition to that there had to be a change in the design of the flood control sluice, which has increased the work in that area. The increase resulting from those changes amounted to $494,500.

Other items, including increased facilities for buildings, grounds, and utilities, increased the cost by $89,500 which was partially offset by a saving of $44,400 based on cost experience on certain items.

Mr. CEDERBERG. Have the increased costs been taken into account in figuring the cost-benefit ratio?

Colonel WHIPPLE. Yes, they have.

Mr. CEDERBERG. You come up with the benefit-cost ratio of 1.16 to 1?

Colonel WHIPPLE. Yes, but that is on the overall system basis.

Mr. CEDERBERG. On the overall system, for the reservoir and dam being built?

Colonel WHIPPLE. The Jim Woodruff Dam and the others, yes.

NAVIGATION

Mr. CEDERBERG. I notice there is some navigation involved on the Appalachicola River, which you plan to bring up to a 9-foot depth for navigation.

Colonel WHIPPLE. Yes, sir.

Mr. CEDERBERG. How extensive is the plan for existing navigation on this river?

Colonel WHIPPLE. This is a river that is required to have a 9-foot channel depth, below the Jim Woodruff Dam, in order to have any effective navigation, from the gulf, and from the Intracoastal Waterway.

Mr. CEDERBERG. How deep is the river there now?

General CHORPENING. The depth of the river varies quite considerably. It has never been improved for navigation, and there are places where it is quite low, and I would say that probably up at the head of navigation, at least in Columbus, at certain places it will be from 2.5 to 3 feet.

Mr. CEDERBERG. It is not navigable at the present time.

General CHORPENING. Not to speak of, normally.

Mr. CEDERBERG. But in computing your cost-benefit ratio, did you take the navigation benefits to accrue to this project into consideration?

General CHORPENING. That is correct. This will be a part of the overall comprehensive plan in which the Jim Woodruff Dam will improve the lower reaches of the river system.

Mr. CEDERBERG. Do you have any figures as to what the navigation benefits will be in the overall project? Just furnish that for the record.

Colonel WHIPPLE. Yes. That is the same as those given previously for Jim Woodruff.

Mr. CEDERBERG. The same as given for the previous project?

Colonel WHIPPLE. Yes, sir.

Mr. CEDERBERG. In other words, the overall system is involved.

Colonel WHIPPLE. Yes. The assumption is that the Buford Dam, in that connection, will increase the low water discharge that makes navigation below the Jim Woodruff Dam possible, without expensive dredging. There is no dam below Jim Woodruff, and the Buford Dam is necessary to maintain the lower section of that river at a suitable depth.

Mr. CEDERBERG. What is the history of the flood in this particular area?

Colonel WHIPPLE. There are considerable areas that have been flooded down the river, as far as West Point, Ga., that is, to the outskirts of that town. The areas more recently affected are the rural areas, and while the flood benefits, are not of very large magnitude, they are important to the people in that valley.

Mr. CEDERBERG. How large is West Point, Ga.?

Colonel WHIPPLE. I do not know the exact population. The major portion of the town is not materially affected.

Mr. CEDERBERG. Will you insert the population figures in the record at this point?

Colonel WHIPPLE. Yes. The population is 4,076, according to the 1950 census.

CLARK HILL RESERVOIR, GA. AND S. C.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$141,750	$464,887
Dec. 31, 1953	220,676	776,949
June 30, 1954 (estimated)	None	113,200

STATEMENT OF AVERAGE ANNUAL BENEFITS

The Clark Hill Reservoir is located about 20 miles above Augusta, Ga., on the Savannah River. Total benefits from the project are estimated at $7,265,000 annually. The flood-control benefit is largely for agricultural lands downstream from the dam. Benefits to navigation are expected by increasing the present nominal channel depth of 6 feet between Augusta and Savannah, Ga., to a navigable depth of 7 feet at all times. A breakdown of the benefits is as follows:

Flood control	$172,000
Navigation	205,000
Power: Values used for power benefits are 20.40 per kilowatt for capacity and 3.0 mills per kilowatt-hour for energy	6,888,000
Total benefits	7,265,000

Average annual charges: Average annual charges are estimated at $3,603,000.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Powerhouse and appurtenant works	$7,494,000
(*b*) Main transformers	432,500
Proposed in fiscal year 1954 but not yet in force:	
(*a*) Switchyard, potential and current transformers	67,400
(*b*) Switchyard, metering equipment	26,200
Proposed in fiscal year 1955	None

Mr. RILEY. We will take up next the project known as Clark Hill Reservoir, Ga. and S. C., some 22 miles above Augusta. The total estimated Federal cost is $78,306,000. The appropriations to date are $76,027,800, and the request for 1955 is $2,170,000.

I note, Colonel, in connection with this project there has been a cost increase of something like $1.5 million over the previous estimate. Can you advise the committee as to the reason for that?

Colonel WHIPPLE. Yes, sir. In the first place, this estimate was previously increased slightly above this level. In the last 2 years it has been reduced. We have had several things occur, even at this late date, and since we did not have sufficient contingency items to cover this we found it necessary to raise that cost estimate. The largest of the items concerned is deficiency judgments pertaining to real estate. A number of real-estate cases have been in condemnation and the judgments have been returned in a considerably larger amount than had been expected, which ran up the real-estate cost to an extent where we think it will take about $800,000 more than had previously been expected in order to close out those real-estate cases.

Mr. RILEY. Were you a little slow in the land acquisition that accounted for that, or did the land acquisition come along at the usual schedule and you ran into these court cases?

Colonel WHIPPLE. I would say it came along about as usual. The land-acquisition total is almost $7 million worth of land acquired. It is an extremely large reservoir and, as usually happens, the easy cases are settled first. After lengthy negotiations the others finally get into court, and it is not unusual to end up with the more difficult cases at the last.

We do have to get possession of the land in time to flood it, but later the prosecution of these cases in court has to be carried out. So I would say that although it is desirable to clear up the real estate early during the construction program, this real-estate lag has not interfered with the operation of the project.

Mr. RILEY. There was not too much relocation of structures within that area; was there?

Colonel WHIPPLE. Not a seriously large amount, although the reservoir is very large. The amount is a little over $5 million.

Mr. RILEY. Was not most of that land forest land?

Colonel WHIPPLE. Yes, sir; that is correct. The average value of this land has turned out to be about $30 an acre. More than four-fifths of that land was woodland; a good part of the balance was pasture.

INCREASED CONSTRUCTION COSTS

Mr. RILEY. Now in your latest planning report of February 1954 you give the original 1937–39 base estimate here, which is less than half of the present estimate. Has there been that much increase in construction costs in that period, or was that an extremely low estimate at that time?

Colonel WHIPPLE. I would say that the difference in cost approximately corresponds to the variation in construction cost in that period of time. The Engineering News Record index of construction cost has more than doubled since the time of the authorization.

There have been project modifications, however. For example, the power installation was increased from 223,000 kilowatts to 280,000 kilowatts, for which there was economic justification, but that increase of 57,000 kilowatts itself increased the cost over $4 million. There are some other project changes; it is not entirely price change that has increased it.

Mr. RILEY. Your construction cost there has practically doubled since 1937–39 as compared with the present time.

Colonel WHIPPLE. Yes, sir.

Mr. RILEY. I note that some of your contingency reserve was for the estimated application of escalation clauses in procurement contracts.

Colonel WHIPPLE. Yes, sir.

Mr. RILEY. Is that economical procedure under these escalation clauses in procurement contracts; or, in your opinion, is it cheaper to buy at a fixed price at the time of the procurement?

Colonel WHIPPLE. Our overall policy has been to buy on a fixed price whenever we can. That is our overall procurement policy. In construction contracts, we have not found it is always possible to do that. During this postwar period, many of these pieces of heavy

electrical equipment as well as turbines have been requiring more than 3 years to manufacture. During the war, the big electrical and equipment manufacturers were constrained to hold their prices down; and, after the war, they were not willing to sell on a firm price basis either to private industry or to the Government, and they have been generally successful in obtaining escalation of prices. There was 1 period of approximately 1 year when we did not purchase 1 single generator because of our attempts to obtain a firm price relationship with electrical equipment companies. We were never able to work that out, and we ended up with allowing escalation. Although we have changed that policy from time to time, in the course of getting a more economical bidding condition, we still have been required to allow for escalation both for heavy electrical equipment and for the turbines.

Mr. RILEY. I am glad to hear you say you did make an effort to get a firm and fixed price at the time of the signing of the contract.

It would seem to me that these big manufacturing concerns would protect themselves by getting the necessary materials at the time they made the contract, like other business houses have to do. It looks as though they wanted the Government to carry the freight for them.

General CHORPENING. As Colonel Whipple has said, we have modified our escalation provisions in the past 6 months to move toward more definitely fixed prices and with a lesser amount of escalation. Just as soon as we can possibly move to firm bids in that respect, we want to do that.

Mr. RILEY. In these contracts with an escalation clause, do you have a limit on the variation, or is that wide open?

Colonel WHIPPLE. Yes, sir, we have a maximum escalation, depending on the time required to manufacture. On articles that are procured at the time of manufacture or in less than 18 months, the maximum escalation allowed is 10 percent; that is, any bid that provides for over 10-percent escalation will not be accepted. Between 18 and 36 months, the maximum escalation allowed is 20 percent; and over 36 months, for heavy generators, the maximum escalation that is allowed is 30 percent.

Mr. RILEY. Do these electrical companies always claim the percentage increase, or have they ever made deliveries for less than the contract allows?

Colonel WHIPPLE. They have made deliveries for less than the contract allows, and the contract provides that it must be a legitimate price in effect at the time of delivery. Now, although these items are specially made for each project, their characteristics can be checked against the price schedules that they charge industry and other Government customers, and we have made the best checks we can to see that we are not being overcharged. Price in effect at time of delivery is not a very firm basis to charge under big Government contracts. We would like to get a firmer basis, but this is the best we can do.

Mr. RILEY. You do not have any renegotiation rights like they have on some of these Army construction projects?

Colonel WHIPPLE. We do in certain cases; yes, sir.

Mr. RILEY. I notice there is a minor increase here which has resulted from the inclusion of roads necessary for the reservoir operation.

Colonel WHIPPLE. Yes, sir.

Mr. RILEY. Were they not contemplated in the original plan?

Colonel WHIPPLE. Yes, sir; but they were increased. The increased cost is about $80,000.

I would like to say this is one of our largest reservoirs, with 78,000 acres of water surface and, of course, many hundreds of miles of reservoir shoreline.

Mr. RILEY. What is the benefit-to-cost ratio?

General CHORPENING. 2.0 to 1.

ALBENI FALLS RESERVOIR, IDAHO

Date	Unobligated balance	Unexpended balance
June 30, 1953	None	$1,155,815
Dec. 31, 1953	$1,236,676	2,930,223
June 30, 1954 (estimated)	140,000	140,000

STATEMENT OF AVERAGE ANNUAL BENEFITS

The Albeni Falls project will provide flood control by reduction of flood damages around the shores of Pend Oreille Lake. The greatest benefits from this project are to be derived from power production. Annual benefits from the project are currently estimated as follows:

Flood control	$93,000
Navigation	7,000
Power: Values used for capacity and energy are 16.50 per kilowatt of capacity and 3.34 mills per kilowatt-hour of firm energy delivered at the load center	3,919,000
Total benefits	4,019,000

Average annual charges: Average annual charges are estimated at $1,547,500.

Data on continuing contracts

Description of work	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Powerhouse and intake structure	$9,570,100
(*b*) Equipment installation	996,000
(*c*) Turbines	3,611,700
(*d*) Generators	2,829,100
(*e*) Governors	265,700
(*f*) Transformers	253,600
(*g*) Station service light and power boards	38,600
(*h*) Main control boards	103,300
(*i*) 15-kilovolt switchgear	90,100
(*j*) CO_2 equipment	20,900
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955	None

Mr. RILEY. The next project is Albeni Falls Dam and Reservoir, Idaho.

This project was authorized in the 1950 Flood Control Act. The total estimated Federal cost is $31,066,000; appropriations to date are $26,706,000, which brings the project to 86 percent of completion.

There is requested for fiscal 1955 $4,360,000, which would bring the percentage of completion to 100 percent.

What is the status of the project, including the balances in funds?

Colonel WHIPPLE. The main purpose of this project is storage; although there is an installed capacity of 42,600 kilowatts, the main benefit of the project is far greater than the power produced at the

site. Power is produced in several dams constructed on the main stem of the Columbia River. The operation of the reservoir storage has been in effect since 1952, so benefits were obtained very early in the construction stage.

Mr. RABAUT. So this has relation to the other projects on the Columbia River?

Colonel WHIPPLE. Yes, sir.

Mr. RABAUT. What is the ability to complete at the present estimate?

Colonel WHIPPLE. We feel the present estimate will definitely complete the project. There are certain things that are not yet completely evaluated, but sufficient funds have been allowed in the budget estimates. There are some real-estate claims that are still in court; we have escalation to be paid on the generators and turbines. But those items have now been mostly evaluated and there is the possibility of a small saving. We feel that the funds requested will be sufficient to complete the project.

Mr. RABAUT. What is the need for this contingency item of almost $3 million?

Colonel WHIPPLE. That contingency item was estimated last summer at a time when there was still almost $12 million worth of work remaining to be placed. At this time it has been more closely evaluated in developing the estimated real-estate cost and these escalation items on generators and turbines. The unknown contingencies in the project are only $600,000. In other words, we have now evaluated all but $600,000 of the contingency items, which is the basis on which we report small savings may be made in the project.

Mr. RABAUT. What is the extent of the cost in regard to reservoir clearing and land acquisition?

Colonel WHIPPLE. The extent of the cost?

Mr. RABAUT. Yes; of the cost increases.

Colonel WHIPPLE. The estimated cost of construction has increased $350,000, and the land costs have increased about $70,000, which may be reduced by reason of the application of the new land-acquisition policy.

Mr. RABAUT. You mean taking it under easement rather than under deed?

Colonel WHIPPLE. Yes, sir; that is correct. We did apply a policy of easements to this project and have taken more than half of the land by easement. However, under the new policy we have gone further and are going to further reduce the fee taking there from 6,100 acres to 4,000 acres, and take the balance under easement.

Mr. RABAUT. 6,100 acres to 4,000 acres is quite a drop.

Colonel WHIPPLE. Yes, sir.

Mr. RABAUT. Do you show large savings attributable to that?

Colonel WHIPPLE. For certain reasons, we think it is unlikely there will be any large savings on this particular project. The easement costs in this case are being set in the courts; they are costing almost as much as fee and in some cases costing more than we expected the fee to cost. So although there should be some reduction because of the application of the policy, we cannot anticipate it will be very large. It will, however, greatly ease our relationship with the local landowners who did not want to give this land in fee.

Mr. RABAUT. Is that the general experience under this change in the land acquisition program?

Colonel WHIPPLE. No, sir. I would say in this case it is less favorable to savings on account of the new policy than any other case I know of.

Mr. RABAUT. What is the benefit-to-cost ratio?

Colonel WHIPPLE. The benefit-to-cost ratio is 2.6 to 1, and, in reviewing that, I believe that was evaluated on a very conservative basis—on the basis of distributing a large amount of the downstream flowage to the downstream plants. This project adds over a billion kilowatt-hours of energy annually to the system of reservoirs down below and, from the economical point of view, is one of the most highly justified hydroelectric projects we have. It is very favorably situated.

Mr. RABAUT. Some years ago we had a chart here showing the development of electric energy in the West and the demand for electric energy in the West. At times the two lines really overlapped each other. I do not think there were very many points in the whole chart where there was enough room for the thickness of a pencil. I notice you are practically saying the same thing in the language in the justification.

What is your ambition to catch up with this situation?

Colonel WHIPPLE. We do not regard ourselves as having any complete responsibility toward catching up with that situation.

Mr. RABAUT. Do you more or less make studies?

Colonel WHIPPLE. We do make studies, and the lack of power in the Pacific Northwest is virtually in the same situation now that it has been for the last 2 or 3 years. I was out there recently, and the governors of the States in the Pacific Northwest feel it is important enough to constitute themselves personally as members of a power policy committee to study ways and means of increasing power. It is a matter that concerns the entire community to an extent probably greater than in any other part of the United States.

Mr. RABAUT. The term used in the justification is "critical shortages of power exist" every now and then.

Colonel WHIPPLE. There have been periodic brownouts and shortages of power, particularly at times when water is not abundant. If they get a low average year, they have very critical deficiencies. And since there is no native coal supply suitable for the purpose of providing energy, the very great and very cheap hydroelectric power potential in this area is the principal energy basis on which their industry can be supported.

Mr. RABAUT. Under your statement, I think it is proper that we should go ahead with this project and complete it.

CONTINGENCY REQUEST

Mr. DAVIS. When you use the term "a $600,000 contingency" does that mean as of this date you know of no reason why you are going to need that $600,000?

Colonel WHIPPLE. That is correct, sir.

Mr. DAVIS. A careful study of the cost of those items you now know to be necessary to complete it would indicate you can do the job without that money?

Colonel WHIPPLE. No, sir; if you will excuse me, that is not an equivalent statement to my way of saying it. We have found by experience that in large construction projects there is a succession of physical contingencies which cannot be anticipated and, while we do not know at the present time where this $600,000 will be used, the experience in other projects, as in the case of Clark Hill, where you back away and later have to come back and ask to put it back, indicates that, very likely, things will turn up requiring the use either of all or a substantial portion of that money. So that while we do not know at the present time where it will go, at the same time we cannot estimate we could do without it, completely, even though the project is quite well along.

General CHORPENING. You can never tell, estimate as you will, what the courts are going to do in condemnation cases. We have been very definitely mistaken in our estimates of what those judgments would be in many other projects that have come up here. There are claims on this project, and in nearly all of the larger projects there are some which are pending. And there, too, we do not know until those are finally adjudicated and settled what they may be.

As I have indicated here, we hope and nothing would please us more than to be able to save all of that contingency; yet it is wise to leave some of it there.

We are hoping to eliminate more and more of those cases where we reduce our overall estimated costs too rapidly and have to come back and say, as we had to do on the Clark Hill project, we just allowed too much of a reduction on that one.

M'NARY LOCK AND DAM, OREGON AND WASHINGTON

Date	Unobligated balance	Unexpended balance
June 30, 1953	−$1,802,994	$4,211,732
December 31, 1953	2,387,397	13,310,921
June 30, 1954 (estimated)	0	0

STATEMENT OF AVERAGE ANNUAL BENEFITS

Power: Values used for capacity and energy are $16.50 per kilowatt of capacity and 3.34 mills per kilowatt-hour of firm energy delivered at the load center	$20,951,000
Navigation: Average annual savings in transportation costs	1,081,000
Irrigation: Reduction in cost of irrigation pumping and pipelines, benefiting development of over 244,000 acres of irrigable land	306,000
Public use: Incidental benefits from recreational and wild-life uses	61,000
Total benefits	22,399,000
Average annual charges	13,297,000

Data on continuing contracts

	Estimated contract earnings
Continuing contracts in force:	
Construction agreement, Union Pacific Railroad	$4, 215, 000
Construction agreement, Spokane, Portland & Seattle Ry., raise bridge approach	3, 210, 000
Construction agreement, Union Pacific and Northern Pacific RR	2, 110, 000
Raise Northern Pacific Columbia River bridge	5, 500, 000
Completion of spillway, nonoverflow dam and Oregon abutment, raise lock sill, repairs—draw span miter gate, Oregon shore fishway, powerhouse, embedded parts turbines and generators, erect bridge crane, tailrace improvement, switch structure and substation, access roads, railroads, installation of utilities	62, 372, 700
Installation of dam equipment, fish facility equipment, powerhouse equipment, turbines and generators, accessory electrical equipment, miscellaneous powerplant equipment, switchyard equipment, electrical distribution equipment	3, 461, 700
Oregon and Washington fishway control equipment	200, 000
Turbines 1 to 4	5, 605, 200
Turbines 5 to 8	5, 450, 000
Turbines 9 to 14	8, 700, 000
Governors 1 to 4	463, 000
Governors 5 to 14	1, 070, 000
Generators 1 to 4	7, 400, 000
Generators 5 to 8	7, 865, 000
Generators 9 to 12	7, 835, 000
Bus and breakers 1 to 8	1, 060, 000
Control boards 9 to 14	246, 000
Bus 9 to 14	190, 000
Breakers 9 to 14	415, 000
Transformers, units 1 to 4	853, 000
Transformers, units 5 to 10	1, 520, 000
Transformers, units 11 to 14	857, 600
Pasco levee	2, 926, 800
Floor and wainscot, powerhouse	230, 000
Proposed in fiscal year 1954 but not yet in force:	
Powerhouse installations, turbines and generators installation	3, 000, 000
Generators, 13 and 14	4, 150, 000
Proposed in fiscal year 1955	None

Mr. DAVIS. We come now to the first of the projects in the Columbia Basin, to the McNary lock and dam on the Columbia River.

The total estimated Federal cost is $286,950,000; total appropriations to date, including $26,350,000 in the current fiscal year, have been in the amount of $244,039,000.

We have before us a request for $24 million to bring the project to 93 percent of the total required funding.

There appears to be an increase in the estimate here of something over $4 million since last year. Will you give us an explanation of that?

Colonel WHIPPLE. Yes, sir. The single item that is responsible for that on a balance is the added bridge cost under Public Law 546, $6,971,300, which actually was larger than the cost increase.

As you will recall, the Northern Pacific bridge across the Columbia and the Washington State highway bridge across the Snake River were built under conditions over those navigable streams such that the Government was not bound to reimburse the owners for modifications in connection with this reservoir. As a result, Public 546 was passed. During the last year's hearing this was referred to and the statement was made that the estimate would be increased this year to reflect

those costs. So that item actually more than accounts for the increase in cost in question.

There were some fairly large items other than that that more or less balance out. We had a very considerable increase in cost at the Pasco and Kennewick levees which gave us a great deal of construction difficulty and resulted in an increase in cost of $3,081,500. However, that was more than counterbalanced by price adjustments and favorable contracts in other directions which reduced the estimated cost by $5,447,800, leaving the net increase of $4,130,000.

There has also been a reduced taking of land amounting to $475,000 in connection with this project.

PASCO AND KENNEWICK LEVEES

Mr. DAVIS. Tell us a little more about the levees at Pasco and Kennewick that caused the additional $3 million in cost.

Colonel WHIPPLE. Those levees are backwater levees. The McNary pool has to reach 340 feet elevation to provide a 90-foot head, raising the pool elevation as far upstream as Richland and the towns of Pasco and Kennewick which have the normal pool elevation, require some protection, especially during flood, which requires levees of an appreciable size.

At the time of construction of the Pasco levee, I was district engineer out there and recall the tests we made to find out how to cut off the underflow underneath the pervious zones of the valley gravels where the levee was to be built. We found this could be done by excavation straight down through the gravel by dragline and the sides held practically vertical. Even though the excavation was about 30 feet deep, on the basis of this test, contract for the excavation of the Pasco levee was let on that basis and prosecuted with considerable construction difficulties. All of the sections of the land did not hold up as well as the test section had. They were able to complete the job at considerable added cost. On the Kennewick side, after the contract got started it was found conditions did not hold up even as well as those on the Pasco side. And although the borings had indicated the gravels were equal, in point of fact they were not equal and certain cementing agents apparently were not there and they would not hold up. Consequently, we had to go to completely different methods of construction. We had to try out a couple of different methods because of the sloughing of the banks. To excavate down beneath the levee to cut off the gravel would not only require an enormous expenditure for excavation, but meant it was even problematical whether we could build the levees in time at any cost.

This $3 million is not entirely an out-of-pocket cost, but includes a possible contingency for claims that will probably be expected on the Pasco side of the river, where the contractor is expected to claim compensation equal to that we gave the Kennewick people in their situation.

CONTINGENCY REQUEST

Mr. DAVIS. What kind of contingency item are you carrying with respect to this particular project?

Colonel WHIPPLE. The contingency item is $2,660,000. However, there is a certain amount of distribution of what might be called con-

tingencies in addition to that, because most of the contingencies including escalation increases have all been evaluated and provided for. As you recall, the first units of this project have already come on the line and we know fairly well what those prices are going to be; but you have unexpected raises. In addition, there are some relocation costs that have been evaluated and are carried because we anticipated the costs.

CONSTRUCTION OF POWERHOUSE

Mr. DAVIS. What do you propose to do with the $24 million requested?

Colonel WHIPPLE. The principal item going on now is the construction of the powerhouse. The first 2 units came on the line in November and December and there remains construction like an assembly line on the rest of the 14 units. These units, as you may know, are physically the largest that have ever been built. The generators are 53 feet in diameter and each generator and turbine weighs 4 million pounds. They are really an impressive sight. And the very great expense of installing and paying for the rest of those will go on for 3 years at the rate of 1 of those enormous generators and turbines every 3 months and that is the principal item with respect to the balance of the year.

There are also costs for the seasoning and repair of those relocation embankments. There has been some settling in the softer materials. On the Oregon side, there are about 8 miles of road that need to be brought up to grade. The saturated foundations settled more than we expected. Similarly there has been some slight sloughing off on the railroad embankments. There are about 70 miles of railroad relocation in connection with this project, many miles of highway, and a lot of rock revetments that have to be protected against wave action during the initial years of the relocation until the railroads are obligated to take them over. Then there is the continuation of real-estate acquisition in the upper end of the reservoir to the amount of about $295,000; although, overall, the real estate is practically 90 percent complete at the beginning of this year.

BENEFIT-TO-COST RATIO

Mr. DAVIS. I note you carry the same benefit-to-cost ratio of 1.69 to 1 that was furnished to the committee last year in spite of the increase in the total estimated cost. Is that just a coincidence that it happens to be the same, or does that indicate it has not been brought up to date?

Colonel WHIPPLE. That may be a mistake. I cannot say why that is the same benefit-to-cost ratio. There might be a slight difference in that.

Mr. DAVIS. Will you bring that up to date and insert it in the record?

Colonel WHIPPLE. Yes, sir.

(The matter referred to follows:)

Explanation of the benefit-to-cost ratio on the McNary lock and dam.

The fact that the benefit-to-cost ratio remained the same as that reported last year even though the total estimated cost of the project increased is due to rounding off of figures. The increase in cost caused an increase in the annual

charges by the amount of the amortization of the increase which is $56,000. Due to the high annual benefits, which remained the same as that reported last year, the ratio changed by only 0.0071. The benefit-to-cost ratio for the 1954 budget was 1.6916 to 1 while that for the 1955 budget is 1.6845 to 1.

Mr. DAVIS. What remains to be done after the 1955 fiscal year?

Colonel WHIPPLE. The principal items to be done after the fiscal year 1955 are to complete the powerhouse and the installation of the remaining generators and turbines. That is about $14 million. In addition to that, there will be the continuation of the work on the relocations and the settling of a few deficiency judgments in the real-estate cases which have not yet been finished before that time. There are other minor items involved. We have the provision at some future date of recreational facilities, for which only a very small amount will be expended prior to that time, and the completion of buildings, grounds, and utilities which is scheduled but for which funds are not being requested at this time.

FUNDS FOR POWER ON THE LINE

Mr. DAVIS. Can you give us the rationale and the effect of the action of the Bureau of the Budget where apparently you requested $18.5 million within ceiling, and $8 million over ceiling, and then the Bureau of the Budget recommended the $24 million that is now before us?

Colonel WHIPPLE. As I understand it, sir, that was granted as the minimum amount of funds which would produce power on the line as scheduled. The funds that we requested would provide for payment at an earlier date of the railroad and highway claims under Public Law 546.

Under the funds as now requested, we can maintain our schedule and we can get power on the line, but the reimbursement for the work actually performed by the railroad, in particular, will not be made unless funds become available through savings in contingencies or some other means, but so far as we can see now, that will not be made until 1956, or that is, until further action is taken by the budget bureau and by the Congress.

General CHORPENING. It is contemplated that the schedule of power on the line will be maintained. If anything is going to suffer, it will be the payments that are required to the railroads, I believe, under this public law which requires that they be reimbursed for those expenditures.

Mr. DAVIS. And that payment of $18.5 million that you requested within ceiling would have affected the power on the line schedule in what way?

Colonel WHIPPLE. It would have delayed some of the last units; they would not have come on the line in time.

Mr. DAVIS. Will you provide for the record a comparative statement to show the schedule of power on the line with the $18.5 million that was requested within ceiling, and the amount of $24 million which is the amount before us?

Colonal WHIPPLE. Yes, sir.

(The matter referred to follows:)

Comparative schedules of power on line 14 units at 70,000 kilowatts each equals 980,000 kilowatts

	With $18,500,000	With $24,000,000
Unit No.:		
1	December 1953	December 1953.
2	December 1953	December 1953.
3	March 1954	March 1954.
4	June 1954	June 1954.
5	September 1954	September 1954.
6	December 1954	December 1954.
7	March 1955	March 1955.
8	June 1955	June 1955.
9	September 1955	September 1955.
10	December 1955	December 1955.
11	December 1956	March 1956.
12	April 1957	June 1956.
13	August 1957	September 1956.
14	December 1957	December 1956.

LOOKOUT POINT RESERVOIR, OREG.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$153,899	$3,448,537
Dec. 31, 1953	3,716,237	12,090,613
June 30, 1954 (estimate)	3,111,400	3,111,400

STATEMENT OF AVERAGE ANNUAL BENEFITS

This reservoir, together with other reservoirs in the Willamette River system, will afford protection for 10 cities and their suburbs situated along the Willamette River, and for 513,000 acres of agricultural land which are subject to frequent overflow. Estimated average annual benefits creditable to Lookout Point project, including Dexter Dam, operating as a unit in the overall Willamette Basin Dam are as follows:

Flood control	$3,524,600
Power: Values used for capacity and energy are 16.50 per kilowatt of capacity and 3.34 mills per kilowatt-hour of energy	2,290,500
Navigation	48,400
Irrigation	259,600
Pollution abatement	155,800
Domestic water supply	111,100
Total benefits	6,390,000

Average annual charges: Average annual charges are estimated at $4,141,900.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Road relocation, county road No. 360	$587,400
(*b*) Railroad relocations, Southern Pacific RR. and U. S. No. 58	2,908,100
(*c*) Railroad relocations, Southern Pacific RR	2,250,700
(*d*) Railroad relocations, Southern Pacific RR	525,400
(*e*) Railroad relocations, Southern Pacific RR	1,037,000
(*f*) Railroad relocations, Southern Pacific RR	878,900
(*g*) Railroad relocations, Southern Pacific RR. and Highway No. 58 bridges	422,400
(*h*) Railroad relocations and reservoir clearing	2,386,900
(*i*) Dam and appurtenances	21,591,500
(*j*) Dam and spillway excavation	1,125,400
(*k*) Elevator	31,500
(*l*) Crest gates	275,000
(*m*) Hoists for crest gates	152,500
(*n*) Penstock stoplogs, trashracks, lifting beam	43,200
(*o*) Powerhouse, excavation, penstocks, tailrace	3,120,200
(*p*) Powerhouse, installation of equipment	1,197,000
(*q*) Generators	2,512,000
(*r*) Turbines	1,887,700
(*s*) Governors	123,400
(*t*) Transformers	321,600
(*u*) 13-kilovolt switchgear	103,600
(*v*) Bus structure	53,500
(*w*) Main control switchboard	73,900
(*x*) Tailrace gantry crane	33,200
(*y*) Oakridge Salmon Hatchery	291,400
(*z*) Leaburg Trout Hatchery	286,600
(*aa*) Dexter Dam, powerhouse and appurtenances	5,759,200
(*bb*) Gantry crane	87,300
(*cc*) Intake gates, guides and frames	240,000
(*dd*) Generators	466,800
(*ee*) Turbines	477,100
(*ff*) Governors	43,700
(*gg*) Transformer	75,500
(*hh*) Switchgear and equipment	109,600
(*ii*) 100-ton bridge crane	88,500
(*jj*) Road relocations, U. S. No. 58	425,100
Proposed in fiscal year 1954 but not yet in force: (*a*) Installation of powerplant equipment	289,000
Proposed in fiscal year 1955	None

Mr. CEDERBERG. The next installation is the Lookout Point Reservoir in Oregon, having an estimated total Federal cost of $90,769,800, and the total appropriations to date have been $85,176,300.

The appropriation requested for fiscal year 1955 is in the amount of $4 million which, if granted, will leave a balance to complete the project after fiscal year 1955 of $1,593,500.

General, would you advise us as to the status of this project, and what you plan to use the $4 million for in regard to that project?

Colonel WHIPPLE. This project is nearing completion. The dam closure was made in May of last year, and we are expecting the first power on the line in October 1954 with the first two units, and with the third unit to be placed on the line in February 1955.

That is the units of Lookout Point itself.

This project is constructed in conjunction with the reregulating dam at Dexter, which is 3.3 miles downstream, which will be ready to operate for reregulation in September 1954 and will have its own single unit of 15,000 kilowatts placed on the line in April 1955.

The project as a whole is 82 percent complete. We have had some land difficulties and relocation problems, since that country is subject to a considerable amount of sliding. The Southern Pacific Railroad and some of the highways have caused trouble, but those relocations are now complete.

The dam itself is 95 percent complete, and the powerhouse is 40 percent complete. The Dexter Reregulating Dam and powerhouse is 47 percent complete. We have fish hatcheries provided for replacement of the fish that go past here, and those fish hatcheries are complete but for a salmon-egg-taking station below Dexter, which is only about one-quarter complete. There has been some slight delay on this dam due to delivery of some of the parts of the turbine, but it is possible that we may make up that delay. Otherwise, we might have to reschedule that power by a few months.

Mr. CEDERBERG. Are those delays the reason you have an unobligated balance of over $3 million in this project?

Colonel WHIPPLE. They are certainly a part of it; yes, sir.

Mr. CEDERBERG. Are there any other reasons?

Colonel WHIPPLE. I do not know of any, sir.

General ITSCHNER. I can add one. There was a rather serious delay in placing the earth material on the dam proper. Delay in the receipt on the job of some steel for a railroad bridge relocation resulted in the earthwork being considerably delayed.

It is gradually being brought back under schedule.

Mr. CEDERBERG. In other words, even if you receive the requested appropriation of $4 million, you will be able to use that, in addition to the unobligated balance that you have here?

Colonel WHIPPLE. Yes, sir; we feel that we can.

Mr. CEDERBERG. There is a matter of a contingency item here, and will you advise as to the extent of this item and the need for it?

Colonel WHIPPLE. Actually, the contingencies in this project have practically all been eliminated except for funds reserved for pending claims.

We have made provision for escalation in the turbine and generator contracts. In addition, although not actually entered as a contingent item, we have made provision for approximately $1 million for expected costs in connection with railroad and highway relocations. These are partly anticipated claims on the part of the contractor, and partly expected slides and settlements that are still to be paid for by the Government. Outside of those items, there are no contingencies in the project which do not correspond to a definite expected need.

Mr. CEDERBERG. What is the nature of the work that will be required after fiscal year 1955 to complete the project?

Colonel WHIPPLE. The project will be essentially completed in fiscal year 1955. There are further requirements anticipated however, after fiscal year 1955 primarily in connection with relocations, including costs in connection with pending claims, and for work in connection with fish hatcheries and recreational facilities.

FISH HATCHERIES

Mr. CEDERBERG. I note that the matter of fish hatcheries has come up here and in your planning report you deleted an amount of $4,370,000 which has been deleted because you are excluding the

capitalized amount previously included for operations and costs of the Leaburg and Oak Ridge hatcheries?

Colonel WHIPPLE. Yes, sir; that is correct. That reduction of approximately $4 million is the primary reason why these estimated costs have now been reduced from $96,600,000 to $90,769,000.

Mr. CEDERBERG. Why did you put them in in the first place?

Colonel WHIPPLE. There was a question, and it has been a matter of discussion for some time, as to whether we would have to pay the State to undertake the operation and maintenance of those hatcheries after they were provided by the dam; and we are not absolutely sure now that the State will accept the responsibility for the operation and maintenance of those hatcheries, but we are going to try to get them to accept it after fiscal year 1957. During this initial period a certain amount of experience will be obtained.

Mr. CEDERBERG. Is it not true that if this dam had not been constructed, the fish hatcheries would not have been necessary and would not have been built?

Colonel WHIPPLE. That is correct, sir.

Mr. CEDERBERG. Again, when you reduce the amount by $4,370,000 from the overall cost of the project, are you not then reducing to a degree the amount that will be distributed as far as power costs are concerned? Will that not have an effect on power costs ultimately?

Colonel WHIPPLE. It will, indirectly, because the fish facilities are an item of joint cost, and will have to be allocated among flood control and power, and other purposes of the project.

Mr. CEDERBERG. But, when you take it out, you are not going to allocate it; are you?

Colonel WHIPPLE. That is correct, provided we can get the State to accept responsibility for it. I think the important fact there is that this entire development on the river is expected to improve the conditions for the salmon in the stream through removal of the pollution in the Portland area, particularly, which makes it difficult for the salmon fingerlings to get to the sea. Also, this construction, we feel, will actually improve conditions in that area. If that is the case, the State should have some responsibility for them, and, in fact, the Federal Government should not have the responsibility for capitalizing and paying for their maintenance and operation from now on in perpetuity.

Mr. CEDERBERG. In other words, this reduction is not firm, by any means?

General ITSCHNER. That is a correct statement; it is not firm.

However, it is felt that after these years of experience, if it is necessary for the Federal Government to pay a capitalized cost for the operation of these fish hatcheries, it would be better known then than it would be known now. We think the $4 million item is considerably in excess of what would be a fair capitalized cost.

Mr. CEDERBERG. Would it not be more prudent for you to wait until you had a definite commitment from the State before you reduced the amount as suggested here, because if you do not, and then you get in trouble with the State over a period of time, and the power has been allocated on a basis with this reduced amount, you are going to have to change that, are you not?

Colonel WHIPPLE. I do not think there is much danger there.

General ITSCHNER. I do not think there is much danger that the allocation for power determination would occur prior to the time that the project was completed. In other words, before that could be done, we must know what the full cost is, sir.

Mr. CEDERBERG. You can assure this committee of that; is that right?

General ITSCHNER. I can assure you of that.

General CHORPENING. The principal reason we took it out of here is that our thinking very definitely is just as we have presented it.

That, being true, we felt it should be presented in this fashion, pointing out, however, the present status of the program. The thing it hinges on, as I see it, is the fact that, from our point of view, we are going to not only replace what was there before, but are going to actually provide an addition definite value by increasing the fish population in this stream due to the removal of pollution, and so forth.

Is that correctly stated?

General ITSCHNER. That is correct.

AUTHORIZATION PROBLEMS

Mr. CEDERBERG. Would you discuss at this point the other problems of authorization in the Columbia Basin?

Colonel WHIPPLE. In general, the Columbia Basin authorization covers three items that are in this year's budget. The Willamette River bank protection project is in the amount of $300,000, the Lookout Point Reservoir for $4 million, and the Dalles project for $34.1 million, or a total of $38,400,000.

The present monetary authorization is $267.3 million; and appropriations through fiscal year 1954 are $232,991,600, leaving a remaining monetary authorization of $34,308,400. There are planning funds of $595,000 included in the budget also, giving a total budget figure for 1955 of $38,995,000.

That means that we must have an increase in the monetary authorization of $4,686,600, if we are to cover all the items that are in the budget at the present time.

Mr. CEDERBERG. Do you plan to go to the Public Works Committee and request this additional authorization?

General CHORPENING. This information has already been given to the Public Works Committee as to the present status on the Columbia Basin, and we understand that there is going to be an omnibus bill this year, and we would, of course, have additional authorization on the Columbia River.

Mr. CEDERBERG. These authorizations in this basin are on an overall basis, and not designed for any particular purpose or project?

General CHORPENING. That is correct, sir.

Mr. HAND. Is the Dexter reregulating dam included within the financial estimate for this project?

Colonel WHIPPLE. Yes, sir.

Mr. HAND. In what respect are we planning to handle the maintenance of and operation of fish hatcheries here in any different way from how we handle them at other projects?

Do we, generally, require the operation and maintenance by the State after we make the construction, or is this project different from any others?

General CHORPENING. I believe that this is the only one of its type; is it not?

General ITSCHNER. There is really no real difference in our efforts to have the State take over the operation of these fish hatcheries, and whether they will or not depends on how much they feel they would be benefited by the project to more than compensate the damage caused by the dam itself. In this case, it seems to us, at least, that there is going to be a rather large margin of additional benefit which the State will get, which would make it desirable for the Federal Government to pay the initial cost, which we are doing, and let them pay for the operation later.

Mr. HAND. On other projects, possibly, because the margin of benefits were either nonexistent or not so large, we have not attempted to get the States to operate and maintain them?

General ITSCHNER. I think we have attempted to do it.

Mr. HAND. But we are not getting away with it?

General ITSCHNER. That is right.

Mr. HAND. This will be to some extent a unique situation where we are trying with some hope of success to get the State to take over?

General ITSCHNER. We feel that is the case here that they are getting so much benefit that they should properly take over the operation and we feel there is some chance that they will do so.

WATER POLLUTION

Mr. RILEY. I notice, General that some of the benefits to be derived from this project is the clearing up of the water pollution problem. Just what is the source of the water pollution in the Willamette River?

General ITSCHNER. That pollution sir comes from several sources. In the first place it is the sewage from the cities along the river. Generally speaking they do not have sewage treatment plants; they are in the process now of preparing to finance such sewage treatment plants but probably greater than that is the waste from the various paper mills and other similar types of forest products industries. They are however, making a great effort to clean up the river and have made considerable progress in the last few years.

With this additional flow during the low-water season, from these dams, the whole problem should be cleared up greatly, and the runs which originally went through this river should be restored.

There have not been very large runs in the Willamette River in the past few years.

Mr. RILEY. Is the State taking any legislative action to prevent further pollution?

General ITSCHNER. I cannot specifically state whether they are taking any legislative action; they are taking action, and getting results from it.

I believe there are State laws that require the construction of sewage treatment plants.

Mr. RILEY. Well, I had particular reference to the paper mills and the veneer mills. Is there not some way in which you can minimize the pollution from these types of plants?

General ITSCHNER. Yes; there is, and they are doing it, sir.

One method they are using is to pond the waste and let it seep down through the ground rather than getting into the river, and that seems to filter out the harmful products.

They are definitely making progress.

Mr. RILEY. The reason I brought that question up was that we are spending quite a bit of money trying to restore the fish industry there. Unless the State cooperates with the proper protective laws, I think we would be wasting our money.

General ITSCHNER. They are cooperating, sir.

THE DALLES DAM, WASH. AND OREG.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$3,622,700	$8,164,439
Dec. 31, 1953	9,020,745	32,984,471
June 30, 1954 (estimated)	6,123,900	6,123,900

STATEMENT OF AVERAGE ANNUAL BENEFITS

Power: Values used for capacity and energy are $16.50 per kilowatt of capacity and 3.34 mills per kilowatt-hour of firm energy delivered at the load center	$22,937,000
Navigation: Average annual savings in transportation costs by replacing 17 miles of relatively hazardous open-river navigation and present inadequate 8-mile long Dalles-Celilo Canal with 25 miles of slack water	993,800
Irrigation: Reduction in operating costs resulting from reduction in pumping lift of as much as 88 feet	13,000
Total benefits	23,943,800
Average annual charges	15,417,300

Data on continuing contracts

	Estimated contract earnings
Continuing contracts in force:	
Grading for highway, railroad, and access road	$3,204,100
Grading for highway and railroad	1,192,100
Railroad relocation (Union Pacific Railroad)	1,400,000
Excavation for nonoverflows dam, construct spillway, excavation for fish channel and approach channel to lock	15,980,800
Powerhouse fish collection system, powerhouse substructure, embed pier nosing and rotor erection bolts, substructure contract phase I accessory electrical equipment and miscellaneous powerplant equipment and excavation for tailrace	31,826,500
Design, manufacture and deliver fishwater turbines	650,100
Manufacture and deliver intake gates for fish facilities and intake gates	2,618,400
Overpass over railroad and underpass under U. S. Highway No. 30 at left abutment	116,500
14 main unit turbines	27,396,000
3 bridge cranes	862,500
Intake gantry crane	287,500
Proposed for fiscal year 1954 but not yet in force:	
Union Pacific RR., Fifteen Mile Creek Bridge	334,900
Stockpile railroad ties	200,000
Grading highway and railroad	940,700
Union Pacific RR., Deschutes River Bridge	1,410,000
Union Pacific RR, Fulton Canyon Bridge	271,000
Union Pacific RR., Spanish Hollow Bridge	326,000
Union Pacific RR., Rufus Bridge	354,000
Manufacture and install fishwater generators	660,000

Data on continuing contracts—Continued

Proposed for fiscal year 1954 but not yet in force—Continued	
4,160-volt switchgears	$150,200
Hydraulic machinery for intake gates	160,000
Two station service generators	198,000
480-volt switchgear	49,500
Wire and cable	275,000
Station service and battery switchboards	143,000
Lifting beams for powerhouse intake gates	240,000
Grading highway and railroad	1,966,400
Powerhouse fish collection system and fishladder; powerhouse substructure, phase III; substructure, phase III, miscellaneous powerplant equipment; tailrace excavation; and nonoverflow dam	23,442,800
Furnish 2 88 turbines and governors	430,000
Main unit governors, fishwater turbine governors	1,888,700
Highway construction	57,600
Proposed for fiscal year 1955:	
Union Pacific RR., track laying and surfacing	1,824,100
Union Pacific RR., stockpile ballast, rail and other track material	1,416,600
Tailrace gantry	80,500
Union Pacific RR., buildings, signs, and appurtenances	140,800
Celilo Falls Village	169,500
Spillway crane	159,500
15-kilovolt system equipment	1,185,700

Mr. RILEY. The next project is the Dalles Dam, also on the Columbia River, and it has a total estimated cost of $348,372,000, which compares to the estimate furnished to the committee last year.

The total appropriations to date, including the $32 million in the current fiscal year, have been $56,676,000.

We have before us a request for $34,100,000 which will provide a total of 26 percent of the required funding for this large project.

Colonel WHIPPLE. The Dalles project is just getting started for really large-scale actual construction. They poured the first concrete on both the spillway section and the powerhouse section in the last 2 months. Those contracts are awarded.

The site of the dam is spread out across two arms of the Columbia River and down the length of the rock island that divides the two arms so that there is ample room to construct, and on those two main contracts we are expecting to go ahead at a very rapid rate.

We are also about to get started on our relocations on a large scale. There is some highway relocation work that is going to be handled with the Union Pacific Railroad in joint contracts.

Those two highways and railroad fills are so close together that they have to be joint relocations, since there they could not be physically relocated separately.

The costs are beginning to come in on the turbines and generators. Those will be material next year, and other accessory equipment at the powerhouse, that has been ordered in advance, and costs are accruing even though it will be several years before they will finally be installed.

This budget amount contemplates a 12-month delay over that previously given the committee. That, of course, entails a very large loss in the revenues that have been expected from the project.

The work has gone fairly well on schedule, although due to winter weather at the present time, it is not exactly as has been expected.

The acquisition of lands will also be going ahead fairly rapidly, and processing of the additional agreements with the Indians on account of the fisheries and relocation of Indian housing will be initiated also, although those amounts are not so large as the others I mentioned.

Mr. DAVIS. You mentioned this railroad relocation. Is that the one in which the Seattle-Portland Railroad is involved?

Colonel WHIPPLE. No, sir; there are railroads on both sides of the river. The one which I was referring to was the Union Pacific main line railroad to the west coast, which terminates at Portland, and that, together with U. S. Highway 30, will be relocated on the Oregon side of the river.

On the Washington side, the main line of the Spokane, Portland & Seattle Railroad has to be relocated. Negotiations have been carried on between the engineer of the railroad and the district engineer for about a year, but fairly intensively in the last 6 months.

They have agreed on certain points, but it is too early yet to say how all the controversial issues of the contract will be settled. However, we do feel at the present time that good progress is being made toward reaching an agreement.

General CHORPENING. The principal part of that construction on the Spokane, Portland, and Seattle is not scheduled to begin until fiscal 1956; whereas, on the Union Pacific and on Highway 30 it is cheduled to begin in the current fiscal year, and to be going very heavily in fiscal 1955.

Mr. DAVIS. This schedule which you are now operating under sets the completion of this project back 1 full year; is that correct?

Colonel WHIPPLE. That is correct; yes, sir.

Mr. DAVIS. You anticipate having about $6 million unobligated and unexpended at the end of this fiscal year; does that represent a holdup on some particular items, or what is the explanation of that?

General ITSCHNER. The amount of savings on contracts already awarded have been in excess of the $6 million that we see left over here. In other words, the estimates contemplated that we would need about $32 million, and now they find that $6 million is not needed for those particular contracts. So, it does not represent any delay whatsoever in the construction of the project.

Mr. DAVIS. Was that $6 million taken into account at the time this figure of $34 million which is now before us was arrived at?

Colonel WHIPPLE. Yes, sir; that was known at that time.

Mr. DAVIS. This request would make available about $40 million during the 1955 fiscal year?

General ITSCHNER. That is correct.

CLAIMS OF UMATILLA AND WARM SPRINGS INDIANS

Mr. DAVIS. Last year this committee recommended $8,250,000, I believe it was, in order to satisfy the then negotiated claims of the Umatilla and Warm Springs Indians.

Have those claims now been satisfied in full?

Colonel WHIPPLE. Agreements have been reached with the Umatilla and the War Springs Tribes and have been approved by the Chief of

Engineers and have been processed and approved by the Secretary of the Interior. So, they are complete.

Mr. DAVIS. Have you disbursed the money for those two claims?

Colonel WHIPPLE. We have disbursed $200,000 to each.

General ITSCHNER. Disbursements have been made in accordance with the terms of the contracts or agreements which stated that $200,000 would be given to each tribe immediately, as representing a loss of fishing grounds near the dam, and then the balance would be paid at the time their fisheries were inundated, which will not be until the project is well on toward completion.

Mr. DAVIS. That $8.25 million which was discussed in our report last year to satisfy the claims of these two groups of Indians, actually the bulk of it is going to have to come out of this appropriation, or subsequent appropriations, for this project; is that correct?

Colonel WHIPPLE. Out of subsequent appropriations.

Mr. DAVIS. And the $8.25 million mentioned by the committee last year was used or is being used for items of construction; is that correct?

General CHORPENING. I would want to check this; I do not believe that in our indications of detailed use of funds last year, we showed a payment of that size to be made in the current fiscal year, because we have never contemplated paying the Indians in full until such time as we had, in fact, taken over their ancient and honorable fishing grounds.

Mr. DAVIS. My recollection is that the within-ceiling request that you presented to us last year was $21 million, and when it left this committee it was $29,250,000, with mention made in the report that the $8,250,000 was then for the payment of Indian claims.

General CHORPENING. That was on the basis that there would be a 1-year delay in the completion of the project, as it was proposed by the Bureau of the Budget and defended by us. However, the conference report said that the funds available shall be obligated in such a manner as to place the first two power units on the line not later than November 1957, and we construed that that was the final action and directive of the Congress to proceed to try to meet that schedule, which we have done.

But, I am sure there was no testimony given by us here last year that indicated that those payments would be made in a lump sum to the Indians, because we have never proposed to do that.

Is that not right?

General ITSCHNER. That is correct.

Mr. DAVIS. You feel, then, that the language of the conference report setting forth the intent of the conferees that the first two units of power would be on the line in November 1947, required you to use those funds for actual construction rather than the satisfaction of those claims; is that right?

General CHORPENING. Yes, sir; the full statement is as follows: "Funds available for construction shall be obligated in such a manner" as to do that.

NEGOTIATIONS WITH YAKIMA INDIANS

Mr. DAVIS. Will you tell us about the negotiations you have had with the Yakima Indians, some of whom have been visitors of ours at several different hearings?

Colonel WHIPPLE. We have been dealing with the Yakima Indians since 1951, and advised them that construction would proceed.

There were five meetings in 1951 with tribal officers, or their legal representatives, and a letter in February 1952 on general policy regarding these negotiations was sent to them outlining negotiation procedures, and requesting that they appoint a committee to negotiate.

During July 1952 representatives of the Corps of Engineers appeared before the general council at an official meeting of the Indian tribe, and explained the program to the Indians, and their attorneys. The general council, then passed a resolution authorizing the tribal council to make the best possible settlement for all damages to the fisheries, and they appointed an official negotiating committee on August 5, 1952. Meetings of this committee were scheduled and then postponed, and finally a meeting was held in Portland by the Indians on December 18. However, the matter was still discussed only in general terms, and we understand that the general council in January 1953 directed the tribal council to delay negotiations, hoping that they could delay construction on the dam altogether, rather than negotiate for the reimbursement, and we were so advised in March.

There was a lot of publicity about that time and delegations appeared before the Congress and so on, last spring. No efforts, however, were made to reopen the negotiations until October 16 of last year, when a meeting was scheduled for November in Portland.

In the meantime, their legal representative, Mr. Kenneth Simmons, died, and that held up everything until a new attorney could be selected.

At the November 9 meeting of last year, the tribe stated what they felt was due the members of the tribe. At that time they claimed that their tribe was the sole and exclusive owner of the fisheries, and claimed 75 pcecent of the total value, which they estimated at $25 million.

That contrasted with our estimate of the value of $23 million for the entire fishery of which, of course, they would get only a much smaller part. They claimed additional incidental losses such as earning power of business, religious, and recreation values, bringing their total claims to $23,437,000 for their tribe alone, and requested additional considerations such as a grant of $3 million for relocating and reestablishing the Indian families and a reservation of 40,000 kilowatts of power to be sold to the tribe at the lowest commercial rate, with transmission to be provided by the Federal Government.

In addition, they desired reimbursement of all expenses incurred by the tribe in the negotiations.

The new attorney has not yet been selected, and in view of that, and the desires of the tribe, it would not appear that we are very close to a settlement. However, in spite of this, the district engineer has felt that we might be able to expect a settlement within a year or so in any event.

Of course, we do not actually have to have a settlement and do not have to get them moved out prior to 1958, when the dam is actually placed in operation, and the fisheries will be drowned out.

Mr. DAVIS. This schedule, then, based on the request before us, would delay the completion of the first two power units until November 1958, or thereabouts; is that correct?

General CHORPENING. That is correct, sir.

Mr. DAVIS. And the project would be completed, then, as of approximately what date on this schedule?

General CHORPENING. The last of the 14 units now are scheduled to be on the line in November 1961.

Mr. DAVIS. You anticipate then that it will be about 3 years from the time the first unit you started to install until it will finally be in operation?

General CHORPENING. Yes, sir.

UNOBLIGATED BALANCES

Mr. HAND. In addition to the $34,100,000, currently sought for financing, you have, of course, an unobligated balance of $6,123,900 which is added to that that you are asking for the current fiscal year?

General CHORPENING. That is correct.

Mr. HAND. Do you expect to be able to obligate in an orderly and efficient manner the entire sum of $40.25 million?

General CHORPENING. We hope so. As General Itschner has brought out, probably the principal reason for having that unobligated balance is that we have had some very excellent bids, and therefore that has saved money. I do not recall offhand, but I think we still do have some fairly large bids to open this year. We are basing it on what we feel at this time would be the estimated cost.

I may say, that we have not changed the estimated cost of this project for the last 2 years. The estimate we present here this year is the same as we presented to the Congress for the fiscal year 1953 appropriation.

We think, the way things look now, we will be able to build this project for something less than the present estimated cost. However, we are too early in the project—we are just now beginning to get started on the job of pouring concrete—to be sure of what would happen to the estimated cost. If we do not encounter any difficulties, and so on, it looks very possible that we will be able to build this project for somewhat less than the estimated cost than we have been carrying from July 1951 up to now.

Mr. HAND. To what extent, if any, does this large unobligated balance represent the prospect for the payment of these Indian claims, that have not been used and will not be used for some years to come?

General ITSCHNER. There is no connection there.

Colonel WHIPPLE. Except for a small item, possibly to initiate payment to the Indians, there will be no large payment for the Indians from that amount.

Mr. HAND. No such payments have been appropriated for this.

Colonel WHIPPLE. No, sir.

General CHORPENING. That is right.

Mr. HAND. I was confused apparently by some suggestion where we were talking about 8.5 million to these Indians that was not appropriated.

Colonel WHIPPLE. That is not payable under the contract for several years.

Mr. HAND. That was not appropriated.

Colonel WHIPPLE. That stems from the statement in the committee's report.

General CHORPENING. We did not testify last year that we were going to spend $8.25 million of funds that we were asking for, to pay

off the Indians. In your committee report you did show $8.25 million to be used for that purpose. However, the conference report stated that the appropriated funds are to be used for construction to get the first power on the line in November of 1957.

Mr. CEDERBERG. General, the power to be generated will go into the Northwest power pool for sale.

General ITSCHNER. It will be disposed of by the Bonneville Power Administration.

Mr. CEDERBERG. There has been under consideration by the Harvey Aluminum Co. a matter of building a large aluminum plant near the Dalles Dam; is that correct?

General ITSCHNER. That is correct.

Mr. CEDERBERG. Are you still contemplating this construction of that?

General ITSCHNER. The last I heard they were still contemplating it, but had made no real start. I believe they had obtained an option on some real estate.

Mr. CEDERBERG. They would be quite a considerable power user?

General ITSCHNER. Oh, yes, a very large one.

Mr. RILEY. Colonel, I note the ultimate installation here is for 22 units. You presently contemplate installing 14 units, generating units, and you are to have the other 8 in future years.

Colonel WHIPPLE. Yes, sir.

Mr. RILEY. You will have the flumes and the powerhouse so that they can be constructed in it?

Colonel WHIPPLE. Yes, sir. The ultimate plan is to complete the installation of the 22 units, but initially merely the powerhouse shell will be constructed and the necessary powerplant equipment for the additional 8 units will be constructed later.

CHIEF JOSEPH DAM, WASH.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$1,089,467	$2,469,067
Dec. 31, 1953	1,951,822	9,418,025
June 30, 1954 (estimated)	0	0

STATEMENT OF AVERAGE ANNUAL BENEFITS

Power: Values used for capacity and energy are $16.50 per kilowatt of capacity and 3.34 mills per kilowatt-hour of firm energy delivered at the load center	$23,617,000
Other: Incidental benefits which accrue through the use of the reservoir for recreational purposes and slackwater navigation have not been evaluated.	
Average annual charges	9,418,000

Data on continuing contracts

	Estimated contract earnings
Continuing contracts in force:	
Stage II, dam construction	$30, 176, 800
Tainter gates	1, 334, 200
Powerhouse and intake structure	59, 605, 700
Main dam switchgear	23, 800
Intake gates	653, 900
Intake trash racks	602, 500
Intake gate operating machinery	261, 800
Draft tube stop logs	549, 200
Gantry crane	51, 500
Hydraulic turbines (10 units)	8, 860, 500
Hydraulic turbines (6 units)	6, 892, 000
Hydraulic turbine governors, etc	657, 700
4 generators	5, 931, 700
4 generators	7, 461, 300
Station service hydraulic turbines and governors	237, 900
Station service generators	180, 000
15 kilovolt bus	905, 200
Breakers and generator grounding equipment	601, 700
Station service grounding equipment	6, 600
Station service transformers	23, 800
Main control switchboards and equipment	378, 000
Main unit substation	61, 000
Transformers	3, 312, 300
Intake structure	26, 600
Motor control centers	48, 600
Construction, transfer, and operation of utilities	44, 100
Installation of powerhouse equipment	7, 171, 400
Proposed in fiscal year 1954 but not yet in force, 230-kilovolt equipment	197, 100
Proposed in fiscal year 1955:	
Reservoir trash control	50, 000
6 turbine governors	469, 400
4 transformers	2, 096, 900
2 generators	3, 755, 900
Breakers and generator grounding equipment	502, 400
Main control switchboards and equipment	318, 800
Main unit substation	

Mr. RILEY. The next project to be considered is the Chief Joseph Dam on the Columbia River, State of Washington, with a total estimated cost of $186,880,000, of which $81,545,800 has been provided, and the request for this year is $27 million. Colonel, could you tell us what the $27 million requested for this year is to be used for?

Colonel WHIPPLE. That project is progressing extremely rapidly and without any complications. In fact, in recent months, the contractors have been making unanticipated progress and spending money really faster than we have anticipated they could deliver the work.

There has been one minor strike that held up operations on the work for a short while, however, that has been settled, and the work is really going extremely well on that project.

The cost estimate is firm. There is even a chance that we will be able to reduce it in the future, so that we have good anticipations in that respect.

General CHORPENING. Let us point out the fact that at this particular place the estimate we are presenting this year is $6,370,000 less than the estimate presented last year to this committee.

Colonel WHIPPLE. The amount requested for 1955, of $27 million is not sufficient to maintain the power schedule that we have been on

previously. The first 4 units will come on the line, as expected, but the remaining units will all be delayed 12 months, due to lack of funds to keep them on schedule.

Mr. RILEY. In order to provide the schedule you had first contemplated it would take how much money this year?

Colonel WHIPPLE. We estimate it would require $3 million more than is now provided, or a total of $30 million to enable us to keep on schedule. In that connection it may be interesting to note that the amount of revenue that will be lost if there is delay in the completion of those units, will be to the extent of $7,900,000.

Mr. RILEY. How do you figure that loss, Colonel?

Colonel WHIPPLE. Each of those 12 units would be delayed for a full year, and the output of those 12 units is 3.4 billion kilowatt-hours of primary energy, and an evaluation of that at 2.5 mills, and at 7 percent transmission loss, which is what we expect the power will be sold at for that time, in view of the impending rate increase, gives an anticipated money return to the Treasury of $7,900,000.

The actual value of the energy, based on comparison with steam generation, is approximately $19 million.

There is an enormous amount of extremely cheap energy to be produced in this dam, and only a comparatively small amount of funds is required to complete the project, to keep it on schedule, compared to the revenues that would be lost.

Mr. RILEY. Is there any question as to whether or not this power could be sold at the schedule you originally contemplated?

Colonel WHIPPLE. I believe there is no question at all. That power is very much in demand. I alluded to the fact that the governors have formed a committee, on which they themselves sit, to encourage the participation of other public bodies and private utilities in the construction of plants. We can observe that private capital is going into the building of more expensive projects in the Pacific Northwest at the present time, in spite of these much cheaper Federal developments. We are quite sure that the people expect that the power demand for the future will continue to increase, which, of course, is what our estimates also show.

DECREASE IN ESTIMATE

Mr. RILEY. I understand that your estimates show a decrease in the cost of this particular project.

Colonel WHIPPLE. A decrease, yes.

Mr. RILEY. Is that contemplated on your staying on schedule, or would that decrease still show up if there is a delay in your schedule?

Colonel WHIPPLE. The decrease would be the same in either event.

Mr. RILEY. How do you account for this over $6 million of decreased cost?

Colonel WHIPPLE. The principal decrease, almost the entire amount is the result from changes in design and more favorable bids that we have received, and also a revision in the cost estimates for the remaining portions of the dam, on the basis of more complete information. There are other minor changes and minor reductions in relocation costs, and there are certain compensating increases in the cost of

land on account of the resettlement claims provided for under public law 534.

Mr. RILEY. I notice that this has an ultimate capacity for 27 generating units, and only 16 are being planned for at this time.

Colonel WHIPPLE. Yes, sir.

Mr. RILEY. The other 11 would be provided temporarily, or you would rather have a skeleton structure that can be put in as a means of completing them as they are needed.

Colonel WHIPPLE. Yes, that is right.

GOVERNMENT HOUSING

Mr. RILEY. Do you have any Government housing in connection with this project?

Colonel WHIPPLE. It was decided at the time the project was built by the district engineer, then Colonel Itschner, that there would be no appreciable amount of Government housing built at this site; in other words, they did not build any elaborate townsite.

General ITSCHNER. I might add that we did build 40 houses at about $7,500 per unit. Those houses, it is contemplated, will be disposed of after the construction period, by sale, if that can be done legally at that time, to the occupants in order to get the Government out of the housing business.

General CHORPENING. Those units are a part of and immediately contiguous to the little town that exists there; are they not?

General ITSCHNER. Yes, and deliberately located there. And they are served by the city's water supply, and the sewage system, and so on.

Mr. RILEY. It would be a very good opportunity, then, to sell them to individuals, to the people who work there on this project?

General ITSCHNER. I should think it would be an excellent opportunity to sell them, and would be both an advantage to the individual and to the Government.

Colonel WHIPPLE. There will be a good many of these people who will be employed there permanently at the powerhouse, and it is very likely they will be sold and occupied eventually by those operating the powerhouse itself.

Mr. RILEY. It is probable then that these houses will be needed for the use of Government employees who are working on the project.

Colonel WHIPPLE. But not Government-owned.

General CHORPENING. And after the completion of the project.

Colonel WHIPPLE. Yes.

COMPARATIVE APPROPRIATIONS

Mr. DAVIS. With reference to your statement, Colonel Whipple, that there was actually in this appropriation just $3 million involved between the difference of keeping up with your schedule, will you insert in the record a statement of the comparative appropriation required in the remaining fiscal year, in order to keep it on the revised schedule under this $27 million requested?

Colonel WHIPPLE. Yes, sir.

(The matter referred to follows:)

Comparative appropriations, required by fiscal year

Fiscal year	Budget request	Revised schedule	Fiscal year	Budget request	Revised schedule
1955	$27,000,000	$30,000,000	1958	$13,302,800	$11,393,800
1956	41,082,500	43,941,500	1959	7,597,600	4,184,700
1957	13,204,000	15,514,200	1960	2,847,300	

Mr. HAND. This project is power only?
Colonel WHIPPLE. Yes, sir.

PURCHASE OF TRANSFORMERS AND GENERATORS

Mr. DAVIS. Before we leave this project, General, I would like to call attention to the fact that last year we had a rather lengthy discussion, because there had been a great deal of discussion with reference to the purchase of the transformers and generators. At that time you told us that the bids were being reopened. What was the actual outcome of that matter?

General CHORPENING. We did readvertise as was stated, at that time, on both the transformers and the generating units—I believe there were four of the units. On the rebidding, foreign firms were again low on the transformers, and awards were made to foreign bidders on thse transformers.

On the generating units the low bidder on the re-advertisement was an American firm, and an award was therefore made to that firm. The same one who had bid earlier on the generators, and had the contract for furnishing the earlier generators on the project.

Mr. RILEY. Mr. Chairman, in connection with that, do you contract for a whole battery of generating units to be delivered at such specified dates of purchases of this kind? For instance, in here you have a contemplated installation of 16 units. You do not contract for the whole 16 units at once, so as to have the same generating units in the whole battery of units?

General CHORPENING. No, sir. We do not contract for the entire group at one time, because it would spread it over too long a period of years. And also it would be such a large contract that it would probably be quite difficult for any one supplier to take on the whole amount. So our plans, in the past, has been on all of these projects to split it up into something less, in this instance, four units, at a time, so we can advertise at the time when it gives us just about a sufficient lead time to get them installed with the other units.

Mr. RILEY. It makes a more practical operating unit, if you have the same type of manufacture for all of the units, does it not, in the way of maintenance and upkeep?

General CHORPENING. Yes, it does; it is desirable to have all of the units of the same manufacture and the same design.

Mr. RILEY. And at a lesser cost?

General CHORPENING. It is desirable, but not necessarily completely compelling, that that be done.

CHEATHAM LOCK AND DAM, TENNESSEE

Date	Unobligated balance	Unexpended balance
June 30, 1953	$754,108	$1,628,810
Dec. 31, 1953	705,876	2,356,375
June 30, 1954 (estimated)	0	0

STATEMENT OF AVERAGE ANNUAL BENEFITS

Navigation:	
Savings in transportation costs on prospective traffic and existing traffic	$897,000
Savings in Federal operation, maintenance and replacement costs for the existing facilities being replaced	230,000
Estimated cost of dredging eliminated by the Cheatham pool at elevation 385	86,100
Total, navigation benefits	1,213,100
Power: Values used for capacity and energy are $21 per kilowatt of capacity and 3 mills per kilowatt-hour of energy	1,212,000
Total benefits	2,425,100
Average annual charges	1,453,000

Data on continuing contracts

	Estimated contract earnings
Continuing contracts in force:	
Construction of dam and power plant cofferdam	$4,618,100
Turbines	2,448,300
Generators	2,070,400
Powerhouse, evacuation 1st stage	406,100
Proposed in fiscal year 1954 but not in force:	
Construction, railroads	245,700
Demolition of locks	93,000
Governors	220,000
Transformers	175,600
Proposed in fiscal year 1955:	
Accessory electric equipment	505,400
275-ton crane	210,800
Miscellaneous power plant equipment	145,400
Powerhouse substructure and install draft tube nosing	3,650,000

Mr. DAVIS. The next project is the Cheatham lock and dam, Tennessee, where there is an estimated Federal cost of $32,200,000, which compares to the estimate presented to the committee last year.

The appropriation to date, including $3,000,000 for the current fiscal year, has totaled $14,605,500. We have before us for the fiscal year 1955 a request for $4,180,000, which is scheduled to bring the total funding up to 58 percent of the estimated cost.

Last year I believe the work on the lock, you told us, was practically done, and I assume it is done by now. Will you tell us the status of the dam and the connections therewith.

Colonel WHIPPLE. On the spillway section of the dam they have been making very good progress. The excavation only has been made for the powerhouse, which is behind a cofferdam and can be constructed and handled entirely separately. The lock itself has not had the permanent sill in it. However, it is in temporary operation at the lower elevation so traffic is actually passing through it at the present time.

The powerplant excavation is 90 percent complete, and the remaining cofferdam is 63 percent complete, although they are working behind it at the present time.

Mr. DAVIS. Last year your testimony showed that the lock was 98 percent complete.

Colonel WHIPPLE. I think that was probably around that, in terms of cost.

Mr. DAVIS. In terms of cost.

Colonel WHIPPLE. The lower gates and the lock itself, and all of the installed machinery is in place. The total, as of June 1953, shows expenditures of $5,660,000, out of $5,900,000, so the 98 percent in terms of cost is very closely correct.

The funds requested, will entail a 12-month delay in getting power on the line. The work is going ahead, I would say, extremely well at the job. It is being constructed almost entirely by floating plants, which is a little bit unusual, but it is going along very systematically, and they have done a highly qualified piece of construction.

I think the project is going along very well. The funds required for the next year will complete the acquisition of the lands and continue the relocation work, initiate the construction of the powerhouse structure; continue the manufacture of the turbines and generators for power, and will initiate the contract for the other miscellaneous electrical equipment that does not have to be done so far in advance.

The closure of the dam, the remaining section of the dam and the routing of the flow through the spillway is expected to be done in July of this year, after which the lock would be in full operation.

Mr. DAVIS. This overall project has a benefit-cost ratio of 1.67 to 1, with about two-thirds of the cost being allocated to power purposes. Is that correct?

Colonel WHIPPLE. Yes. There is considerable navigation on the Cumberland River at the present time. The small locks that are involved on the river now require tows coming up, we will say, of six barges, to be split into several different increments. They cannot pass two barges abreast through the old locks now. The tows have to be split both ways, so that current experience on the Cumberland River according to the tow operators is that it takes approximately as much time to go through the locks as it does to make the rest of the trip.

These old locks are approximately half a century old; the wicket gates are beginning to fall to pieces; the concrete in places is beginning to become quite feeble, and they are inadequate for the capacity of the modern barge line traffic.

The power produced will be distributed through the Tennessee Valley Authority network. The entire output of the Cheatham and Old Hickory projects together, will be less than the demand on the system of the Arnold Engineering Development Center, a defense installation, which will take more power than these two dams together will put out.

This Cheatham project is operated in conjunction with the upstream reservoirs which have a higher head, and in time of floods, when the head of this project will be reduced, it will be firmed up by the Wolf Creek and Dale Hollow, whereas these downriver plants, both Old Hickory and Cheatham will make up for the deficiency in power at the upper projects under other operating conditions.

The system operation of these plants on the Cumberland River will increase the reliability in the amount of firm output use.

Mr. DAVIS. You consider this $18.2 million cost estimate for the power installation here to be a firm estimate?

Colonel WHIPPLE. We believe that is all right; that is the cost limit involved by the authorizing act, and we do think that this is a fully adequate estimate.

General CHORPENING. We made no change in the estimated cost this year on this project.

OLD HICKORY LOCK AND DAM, TENNESSEE

Date	Unobligated balance	Unexpended balance
June 30, 1953	−1, 253, 994	−1, 174, 927
December 31, 1953	1, 838, 903	5, 313, 514
June 30, 1954 (estimated)	0	0

STATEMENT OF AVERAGE ANNUAL BENEFITS

Navigation: Reduction in transportation costs and savings in operation and maintenance costs from elimination of existing structures and substitution of 1 modern lock	$432, 000
Power: Values used for capacity and energy are $22 per kilowatt of capacity and 3.0 mills per kilowatt-hour of energy	3, 460, 000
Total benefits	3, 892, 000
Average annual charges	2, 383, 000

Data on continuing contracts

	Estimated contract earnings
Continuing contracts in force:	
Construction, county roads	$1, 292, 500
Construction, dam, lock, and powerhouse cofferdam	10, 202, 200
Turbines	3, 962, 600
Governors	310, 500
Generators	4, 527, 600
Main power transformers	327, 400
Power and lighting transformers	1, 500
Outdoor instrument transformers	17, 800
Switchboard and transformers	100, 000
Outdoor switches	43, 900
Control centers and lighting switchboard	13, 200
Generator breaker and auxiliary switchgear	200, 000
Circuit breakers and parts	147, 000
Main control switchboards and appurtenances	130, 500
275-ton crane	211, 000
75-ton crane	157, 900
Draft tube crane	42, 800
Proposed in fiscal year 1954 but not yet in force:	
Completion of powerhouse, install turbines, governors, electrical equipment and powerplant equipment and construct switchyard	15, 292, 800
Proposed in fiscal year 1955:	
2d phase, clearing contract	520, 500

Mr. HAND. The next project is Old Hickory lock and dam, Tennessee, with a total estimated Federal cost of $53,200,000; the appropriation to date, $25,421,200, and the appropriation requested for the fiscal year 1955 is $14,350,000, which will bring the project to within 75 percent of funding completion.

The balance necessary to complete after fiscal year 1955 is estimated to be $13,428,800. First, Colonel, with reference to this $14,350,000, I take it from glancing at the budget, that $2,230,000 is to repay money already borrowed; is that the situation?

Colonel WHIPPLE. Yes, that is correct.

Mr. HAND. That money was borrowed from some other projects and used for those projects, and now you intend to repay it?

Colonel WHIPPLE. That is right.

Mr. HAND. So that the actual amount you expect to spend on the project amounts to approximately $12,120,000, that is the amount requested for appropriation less the $2,230,000?

Colonel WHIPPLE. Yes, sir.

Mr. HAND. What is the general nature of this project, Colonel; just a brief statement for the record, if you will.

Colonel WHIPPLE. It is primarily a power project with navigational advantages. The navigation involved on the Cumberland River is largely local traffic, upstream from Nashville. It is expected to include chemical product movements, although at the present time it is largely sand and gravel, but that, of course, is not the most important benefit.

Mr. HAND. Those were integrated, I take it, when the project was first being considered.

Colonel WHIPPLE. Yes, sir.

Mr. HAND. Both with respect to power and navigation.

Colonel WHIPPLE. That is right. And this project, as regards power, is integrated with the reservoir storage of Dale Hollow and Wolf Creek projects, which are further upstream.

The benefits are primarily power. This is a more productive power project than the Cheatham project, although the navigation benefits are less.

I might add that we have a change to make on these sheets in the estimated cost. We have received more favorable bids recently on this project and the estimated Federal cost of $53,200,000, we may now decrease to $50,900,000, so that instead of an increase for the year we now estimate a decrease of $1 million below what we had a year ago.

Those contracts are not yet awarded, but we have two low bids, and we feel that they are sufficiently firm that we should change the estimated cost at this time.

Mr. HAND. I am sure the committee is pleased to hear that.

General CHORPENING. And incidentally that will make the overall statement, which I gave earlier, even more favorable as to the overall figures, although I did not include that in my computation at the time.

Colonel WHIPPLE. There is one relationship in this project to the Tennessee Valley Authority system that I would like to mention, and that is that the completion as scheduled, ties in with the proposed completion by the Tennessee Valley of the Gallatin steam plant, and if we did not complete it as now scheduled, there would be a requirement for additional cost for pumping facilities for supply of water to the plant, at a cost of approximately $750,000. We have, therefore, tried to complete this project on schedule, and we have made certain adjustments in the plans for cofferdams, so if necessary we can raise the powerhouse cofferdam in order to get the pool level up sufficiently to accommodate the steam plant at the time it comes into operation.

Mr. HAND. At the water level that is required?

Colonel WHIPPLE. So the water level would be sufficient.

Mr. HAND. What do you expect to spend, generally speaking, the $12,120,000 for, primarily, the powerhouses?

Colonel WHIPPLE. The powerhouse is the largest item, and also the real-estate acquisition is progressing. The real estate, as the committee noted last year, is very expensive.

Before seeing the committee's record, I noted the same thing, and I find that there are a lot of showplaces in that area, where people raise fine-blooded cattle, and have developed very good homes and land actually does sell at a very high rate in the flooded area.

Mr. HAND. I recall last year it was noted that the overall average was something like $300 an acre. Is that accounted for by the testimony you have just given us?

Colonel WHIPPLE. Yes, there is another factor; there is considerable tobacco land in the area, which goes at a very high price.

PROGRESS OF PROJECT

Mr. HAND. How long have you been moving along on this project, Colonel?

Colonel WHIPPLE. How long?

Mr. HAND. Yes; how long has it been under construction?

General CHORPENING. We got the first construction funds in fiscal year 1952.

Mr. HAND. It has not been very long.

General CHORPENING. No.

Mr. HAND. However, there still seems to have been some delay in connection with the land, because I notice in this year's request, you have estimated land and damages would require $2,494,000. Will you require the application of that sum?

General CHORPENING. No. We are trying to secure the land in line with the estimate of the overall progress, and there is no point in securing the land at an earlier time, and that we did not need until some time later.

Mr. HAND. So that in effect the acquisition of the land is proceeding in a normal fashion at this time?

Colonel WHIPPLE. That is correct. Furthermore, this was one of the taking lines approved prior to the new policy, but in effect we anticipated the new policy, and the estimate did not have to be changed. So that our plans are proceeding on a firm basis. The taking line is very close to the pool, except in scattered public use and access points along the pool. We are making sure that we are not taking any land that should be left in the hands of private ownership, particularly on account of the value of the land, and the very excellent character of it for residential and farming purposes.

Mr. HAND. I am curious to know on what other project or projects you expect to pay this $2,230,000?

Colonel WHIPPLE. That is not definitely established, sir. We obtained the money from several different sources. Approximately $1 million came from the Kansas City flood control at the same time, and so it is probable that about $1 million of it will go back to the Kansas City project.

However, we cannot say that definitely at this time. It depends upon the relative need of the various projects. After all, there were

quite a few loans and borrowings that have to be equalized in the next fiscal year, and we were unable to definitely earmark all funds in connection with particular projects at this time.

MAINTENANCE OF POWER ON SCHEDULE

Mr. HAND. I had intended to ask you what is the basis for your keeping the power on schedule on this project, whereas on many projects it is not kept on schedule. Is the answer to that found in the previous discussion in connection with the request for the TVA?

Colonel WHIPPLE. One of the reasons is the fact that the project has already been delayed 2 years; the contracts for procuring the generators and turbines were let well in advance of what would be necessary to meet the present schedule, and in fact, certain equipment for the powerhouse has already been delivered. There is no question about these supply contracts interfering with the production schedule. You have put your finger on the fact, that is the one where we have no possible interference with the construction schedule, on account of equipment supply contracts.

Mr. HAND. Colonel, your requests of the budget here are within a limit of appropriation of about $10 million, would you say?

Colonel WHIPPLE. Yes, $10 million, and $4,350,000 over ceiling.

Mr. HAND. How much over ceiling; $4,350,000 over ceiling?

Colonel WHIPPLE. That is correct. But we also at that time stressed to the Bureau of the Budget the suggestion as between Old Hickory and Cheatham, both of which might be late, that it would be more productive, from the point of view of power, to complete Old Hickory on schedule than it would Cheatham, which would entail much less delay in power output than cutting both of them proportionately.

Mr. HAND. That argument apparently seemed to be persuasive?

Colonel WHIPPLE. Apparently so.

General CHORPENING. Apparently so, since they gave us all, within and over ceiling.

Mr. HAND. What would be the effect on the project if the overceiling amount were not provided; to what extent would that further delay the production of power or the facilities to be provided on the project?

Colonel WHIPPLE. It would cut it 1 year to do that.

Mr. HAND. Will you tell us briefly the present status of the principal construction features of the project?

Colonel WHIPPLE. The lock is about 85-percent complete; the dam itself is about 88-percent complete, and the overflow section of the dam is expected to be completed during the current fiscal year, as well as the nonoverflow section. Then the lock will be placed in temporary operation about the end of the current fiscal year, although at a reduced height, and no doubt with a temporary sill.

Mr. HAND. The facilities already completed, to be finished by the end of this fiscal year, will have a certain amount, a rather considerable use in themselves, will they not?

Colonel WHIPPLE. The lock; yes.

Mr. HAND. The lock.

Colonel WHIPPLE. Yes. Of course, at the present time navigation such as there is, is passing through the gap between the cofferdam and

the lock, and there will be an advantage to have the lock in temporary operation, although the pool will not be raised at that time, and will not until early in the fiscal year 1956.

Mr. HAND. Are there any other material benefits to be derived from this project other than navigation and power?

Colonel WHIPPLE. No material benefits. It will be a very fine recreational pool, and in that area I am sure it will be used extensively on account of, as I mentioned, the residential character of the area and the fact that it is quite close to Nashville.

Mr. HAND. There is nothing involved before us now with respect to the construction of the recreation facilities, is there?

Colonel WHIPPLE. No, and only a fairly small expenditure will be involved at any time.

BENEFIT-TO-COST RATIO

Mr. HAND. The benefit-cost ratio, of course, involved both navigation and power?

Colonel WHIPPLE. Yes, sir.

Mr. HAND. Which you have stated to be 2.51 to 1; is that the computation as of now?

Colonel WHIPPLE. No, sir; it is 1.63 to 1.

Mr. HAND. How much?

Colonel WHIPPLE. 1.63 to 1.

Mr. HAND. How much of that is for power, if it can be divided?

Colonel WHIPPLE. It is about 89 percent power.

TUESDAY, JANUARY 26, 1954.

TABLE ROCK DAM, MO. AND ARK.

Mr. DAVIS. The subcommittee will resume this morning with a discussion of the Table Rock Dam, in accordance with the provision inserted in the conference report on the civil-functions appropriations bill for 1954 which reads as follows:

> The conferees are in complete accord that no further construction is to be commenced at Table Rock Dam until approval has been obtained from the Committees on Appropriations of the House of Representatives and of the Senate.
>
> It is the desire of the conferees that a study be made of the project by the Corps of Engineers as to the need for power in the area, and the ability of present governmental facilities and private-power utilities to meet any further need that might exist, and the adequacy of the present estimated cost of the project. Such study should be presented to the above-mentioned committees not later than January 1, 1954.
>
> There exists at the present time authorization for an appropriation of $169 million in the White River Basin, of which $118,143,000 has been appropriated for the fiscal year 1953. The conferees are in accord that should the revised estimated cost of Table Rock Dam, when added to the balance of authorization remaining exceeds that amount, proper legislative authority should be obtained from the Congress for the authority to appropriate funds in excess of the present authorization.

In connection with this report we will insert a letter from the Chief of Engineers transmitting this report.

(The matter referred to follows:)

DEPARTMENT OF THE ARMY,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington 25, D. C., December 16, 1953.

Hon. JOHN TABER,
Chairman, Committee on Appropriations,
House of Representatives,
Washington, D. C.

DEAR MR. TABER: I am transmitting herewith a report (Enclosure No. 1) and supporting data (Enclosure No. 2) on studies of the Table Rock Reservoir, Mo. and Ark., prepared by the district engineer, Little Rock District, Corps of Engineers, Department of the Army, Little Rock, Ark. This report was prepared and is submitted pursuant to the request contained in the conference report on the civil-functions appropriations bill for 1954, printed as House of Representatives Report No. 889, 83d Congress, 1st session, as follows:

"The conferees are in complete accord that no further construction is to be commenced at Table Rock Dam, Ark. and Mo., until approval has been obtained from the Committee on Appropriations of the House of Representatives and of the Senate. It is the desire of the conferees that a study be made of the project by the Corps of Engineers as to the need for power in the area, the ability of present governmental and private power utilities to meet any future need that might exist and the adequacy of the present estimated cost of the project. Such study should be presented to the above-mentioned committees not later than January 1, 1954. There exists at the present time authorization for appropriations of $169 million in the White River Basin, of which $118,143,000 has been appropriated through fiscal year 1953. The conferees are in accord that should the revised estimated cost of Table Rock Dam, when added to the balance of authorizations remaining, exceed that amount proper legislative authority should be obtained from the Congress for the authority to appropriate funds in excess of the present authorization."

The Table Rock Reservoir project was authorized for flood control and power generation by the Flood Control Act approved August 18, 1941, as a unit of the general comprehensive plan for flood control and other purposes in the White River Basin. The Table Rock Dam site is on the White River in Taney and Stone Counties, Mo., 40 miles south of Springfield, Mo., and 8 miles upstream from Branson, Mo. The reservoir will have a total storage capacity of 3,462,000 acre-feet; 760,000 of which is allocated to flood control, 1,932,000 for regulation of streamflow for generation of hydroelectric power, and 770,000 as the minimum permanent pool to provide head for power generation.

The project will regulate flow from about 4,000 square miles of drainage area above the damsite. The reservoir will afford a substantial degree of flood protection to the towns of Branson and Hollister, Mo., immediately downstream from the damsite, and with other reservoir projects, it will provide flood-control benefits to about 1,064,000 acres of land along the White River downstream from the Bull Shoals Dam, and additional flood-control benefits to the lower Mississippi Valley.

Power-generating facilities proposed for the Table Rock project includes an initial installation of 2 units having a capacity of 50,000 kilowatts each and provisions for the future installation of 2 additional units of the same size. Dependable capacity and energy made available by the Table Rock project, including increases at downstream hydroelectric plants, are 123,000 kilowatts and 541 million kilowatt-hours annually, respectively.

The estimated cost, benefits, and annual charges are summarized in the following tabulation:

Cost		$78,610,000
Benefits:		
Flood control	$956,000	
Power	3,735,000	
		4,691,000
Annual charges		3,241,000
Ratio, benefits to annual charges		1.45

In analyzing the need for Table Rock in supplying power loads the district engineer obtained data from publications and obtained views on the power requirements and needs from the Federal Power Commission, the Southeast Power

pool, Advisory Committee on Power for the Southwest (association of rural electric cooperatives), Southwestern Gas & Electric Co., and Southwestern Power Administration (Department of the Interior). This analysis indicated that additional generating capacity over and above existing capacity and definitely scheduled additions less retirements will be required as follows: 163,000 kilowatts in 1958, 335,000 kilowatts in 1959, and 531,000 kilowatts in 1960.

Operating companies state that they will schedule added capacity as it becomes required to meet future power needs but that the capacity of Table Rock could be readily absorbed into the loads of the area. The cost of power which will be made available by the Table Rock project is considerably less than the cost of equivalent energy from the alternative method considered likely to be utilized in lieu of the project. Representatives of utility companies in the area state that the utilities are ready and willing to contract for the entire output of Table Rock project at the cost of producing similar capacity and energy by the best alternative method available to the companies. Representatives of cooperative bodies state that they have anticipated the use of the Table Rock project as a source of power to meet their growing needs.

The estimated cost of constructing the Table Rock project is $78,610,000. This estimate has been carefully reviewed and is considered adequate based upon current price levels. The costs which are considered properly chargeable to power amount to $61,450,000 of the cost to construct and $2,540,000 of the annual charges. On this basis the cost of power made available by the Table Rock project is approximately 4.7 mills per kilowatt-hour. The value of the power in terms of the cost of producing equivalent capacity and energy from an alternate source (steam-electric) is approximately 6.9 mills per kilowatt-hour. Thus the ratio of the power benefits to the cost is 1.47.

The Congress has authorized appropriation of $169 million for initiation and partial accomplishment of the approved comprehensive plan for the White River Basin. The total appropriation to date for that purpose has been $121,128,000 including $5,151,000 for the Table Rock project. Thus prior to the completion of Table Rock, it will be necessary to increase that authorized amount. Accordingly, I propose to recommend that the Congress include provisions for an increase in the authorization for appropriations in connection with the next flood-control bill which is expected to be considered in the session of Congress beginning in January 1954.

From the studies made pursuant to the request cited above, I conclude that:

(*a*) The power needs in the area of the Table Rock project are expanding at a rapid rate and there will be a need for substantially more additional power by the time Table Rock Reservoir can be completed than the project will make available.

(*b*) The power which will be made available by the Table Rock project can be fully integrated into the power supply of the area.

(*c*) The cost of power which will be made available by the Table Rock project will be considerably less than the cost of equivalent power from the alternative source considered likely to be utilized if the project is not completed.

(*d*) In addition to needed low-cost power, the Table Rock project will provide needed flood control and will provide other benefits incidental to the primary purpose.

(*e*) The project is economically justified.

(*f*) The present estimate of $78,610,000 is adequate to construct the project.

A similar letter is being sent to the chairman, Committee on Appropriations, United States Senate.

Sincerely yours,

S. D. STURGIS, Jr.,
Major General, Chief of Engineers.

Mr. DAVIS. What can you tell us about the overall authorization situation in the White River Basin at the present time?

STATUS OF AUTHORIZATION

General CHORPENING. The figures as stated out of the conference report last year are correct, with the exception that I believe there was $1 million additionally appropriated last year for Table Rock not to be used until cleared by the committees, and $2 million for Bull Shoals.

So, it would change these figures essentially to that extent. One million one hundred twenty-eight thousand dollars has been appropriated at this time.

Mr. DAVIS. How much should be charged against Table Rock Dam?

General CHORPENING. $5,151,000 should be charged against Table Rock Dam. That includes funds that have been applied to planning and have been appropriated for construction.

Mr. DAVIS. You have approximately $53 million within your authorization that could be appropriated for the Table Rock Dam; is that correct?

General CHORPENING. That is right.

Mr. DAVIS. How much is your latest estimate of the cost of Table Rock Dam?

General CHORPENING. The latest estimate is $78,610,000.

Mr. DAVIS. You are about $25 million short, authorizationwise, if you are to proceed with the construction of Table Rock Dam; is that correct?

General CHORPENING. We are $25 million short of authorization to complete the construction of Table Rock Dam; yes, sir.

Mr. DAVIS. Properly speaking, the appropriation of funds for the initiation of the project would represent such a commitment in that regard that in your normal procedure would you not anticipate getting the required authorization before proceeding with the actual construction at Table Rock Dam?

General CHORPENING. It is better to do that, but there are a number of projects under construction at the present time where the monetary authorization is not adequate to complete those projects, as for instance, the Columbia projects discussed yesterday.

Mr. DAVIS. What plans do you have for obtaining the necessary authorization in the White River Basin?

General CHORPENING. Undoubtedly, there is going to be an omnibus bill this year, and at the time we are testifying on the basin authorizations, it would be pointed out to the Public Works Committees that there is not adequate authorization presently to complete the entire construction of Table Rock Dam.

Again, the Congress has in many instances authorized basin projects, but has not at the same time authorized the full monetary amount required.

Mr. DAVIS. It certainly is not a desirable practice for this committee to make appropriations that in effect commit the authorization committee to enlarge these basic authorizations or find themselves with a half-completed project; is that not right?

General CHORPENING. Well, I would say that that is a matter that really lies between the committees of Congress to determine how they want to handle those things.

As I pointed out, I do know that in so many instances it has been the practice of the Public Works Committees and of the Congress in the past in regard to authorizations to do that.

From our standpoint, it would be desirable to have full authorization on monetary matters ahead of time, so as to avoid the situations that have arisen both last year and this year on the Columbia where we are right up against the limit on sufficient monetary authorization to cover the request for appropriations.

TOTAL COST OF PROJECT

Mr. DAVIS. You told us the latest cost estimate was $78,610,000?

General CHORPENING. Yes, sir.

Mr. DAVIS. What is the date of that estimate?

Colonel WHIPPLE. That estimate has been reviewed again, and is correct as of last summer, on a date comparable with all our other cost estimates that we have recently given the committee. So far as we know, it is current as of today, although it was reviewed formally last summer.

General CHORPENING. It was reviewed again in connection with the overall study directed by the conferees on our appropriation bill last year.

Mr. DAVIS. That is the figure which appears in your planning report, dated January 1953, and your studies in conformance with the request of the conferees confirm the amount of that estimate?

General CHORPENING. That is correct, sir.

NEED FOR POWER

Mr. DAVIS. The third of the requests of the conferees was that a study be made of the project as to the need for power in the area.

What can you tell us about the power situation in that area?

Colonel WHIPPLE. The need for power in the area was covered by a survey of the situation. It was made by direct contact with the Federal Power Commission regional office; the Southwest Power Pool, as an organization, and also the utility companies who form this Southwest Power Pool; with the Southwest Power Administration, which is the marketing agency of the Interior Department in that area; and with the rural electrical cooperatives, both individually and through the organization that represents them.

These various agencies generally agree that the power from Table Rock can be absorbed in an area which comprises eastern Kansas, southern Missouri, and most of Arkansas west of the Mississippi and parts of Louisiana, which includes the service areas of 13 class 1 electrical utility companies.

The area involved is one in which there has been a tremendous growth in industrial development. As an index of that, the value added by manufacturing in this area in 1939 was only $385,000, and by 1947 it had increased to $1,240 million. What had been almost entirely an agricultural area has rapidly been growing with many types of industries.

The requirements of this area were developed differently by the Federal Power Commission and by the private utility companies. We used the Federal Power Commission estimate which is the more conservative. Studies of the Federal Power Commission show an average yearly increase in energy requirements in the past of about 8.7 percent annually and indicate that the energy requirement is going to increase by 1960 to 18.5 billion kilowatt-hours as contrasted to 10.575 billion kilowatt-hours used in 1952.

The Southwest Power pool's estimate agrees generally with that, although it is slightly higher, and the Southwest Power pool feels that the marketing area should be slightly more extensive than that given by the Federal Power Commission.

The total required capacity of the plants in the area to meet this demand is estimated at 2,990,000 kilowatts by 1955, and 3,855,000 by 1960.

The crux of the matter as to whether the power is needed or not is the rate at which the additional power needed will be made available from other sources. The private utility companies who were consulted indicated that they have plans for major expansion of their capacity which are firm up to and including the year 1956, and the plans for the capacity required by 1957 will be firmed up within the next month or so. Those plans indicate that the capacity available by those years will be sufficient to meet the need at that time. They further indicate if the dam is not built that they will expand their capacity to supply the additional power that is required.

On the other hand, the utility companies and the Federal Power Commission also indicate that the peaking capacity provided by this multipurpose development can very well, be integrated into the system with advantage to the companies and to the system from a technical point of view.

A reasonable proportion of hydroelectric power—as much as 25 percent—is advantageous to a steam-generation system, and in this particular case there will be less than 10 percent of hydroelectric power available at any time that we can predict in the future.

So, that from a technical point of view, this project is advantageously designed to meet the requirements for providing peaking capacity to the system that now exists and is interconnected through the distribution lines in this entire area of the Southwest Power pool.

The companies indicate that they can absorb all of this power, and one of the major companies has indicated that they would be willing to purchase this power at rates which would be equal to the cost that they would incur in procuring similar amounts of power from other sources.

This power is produced, as we have developed in the study, at about 2 mills per kilowatt less than power can be produced by the steam-electric generating plants constructed by private utilities.

Therefore, we believe that the power can be absorbed and can be economically sold to these companies, on the basis of the cost studies of the Federal Power Commission, and on the basis of our own evaluation of the situation.

Mr. DAVIS. When you say it can be produced more cheaply, what does that mean in the way of amortization of the investment?

Colonel WHIPPLE. That includes the cost of amortizing the power investment in this project. We have made a tentative cost allocation to this project on the basis of the separable costs remaining benefit method. This is the method that we have commonly applied, and has been published by the Federal Interagency River Basin Committee. Of the total estimated cost of the project of $78,610,000, a total of $61,450,000 would be allocated to power. That power investment would be required to be fully amortized within 50 years at 2.5 percent interest, together with the operation and maintenance costs similarly allocated to power during this period.

On the basis of those costs, and the value, or the cost of producing this power from alternative sources, as estimated by the Federal Power Commission, it is indicated that the rate required to fully amortize

this investment, together with its operation and the maintenance charges, would be approximately 2 mills per kilowatt cheaper than the cost of power from alternate sources.

Mr. DAVIS. You told us, Colonel, that the period of amortization is in accordance with the standard policy of amortization within 50 years.

I am informed that on the basis of the contract already negotiated for the rate of power in this area, it will take at least 70 years to amortize this project.

What is your comment on that?

Colonel WHIPPLE. The only comment I could make on that, sir, is that we have as yet no final agreement with the Interior Department on the method of making cost allocations and, therefore, there may be some difference in the method of computation. However, the principal discrepancy between those two results is in the fact that the marketing agency is using rates which were charged on an existing contract, which I understand calls for the sale of the power at materially less than the Federal Power Commission has estimated is the alternative cost of producing that power through steam generation.

Mr. DAVIS. What is the kilowatt rate at the present time?

General CHORPENING. I would like to say this: As the committee knows, all the contracts for the sale of power are made by the Department of the Interior. Our responsibility is to indicate to the Interior Department and the Federal Power Commission our conclusions and recommendations as to the proper allocation of the cost of any of our projects to power, and I do not know whether we have any direct information on the charges that are now being made in contracts that have been entered into earlier between the Interior Department and others for the disposition of power from other dams now in operation in that area.

The whole matter of allocation of costs and the resolution of that into charges for the power and contracts is now under very deep study by the Interior Department, which is now cooperating with us on the proper method of allocation.

I can say again that we are much closer to an understanding and a mutually agreeable understanding than we have been in a long time as to the proper method of allocations on these projects.

Mr. DAVIS. It is very difficult for the committee to accept the categoric statement that these rates are going to be 2 mills per kilowatt-hour less than the cost of power by an alternative method, if the power rates are in a state of flux such as that.

General CHORPENING. We are saying here that, based on a 50-year life of this project, amortizing the costs allocable, as we see it, to power, that power can be sold from this project at a rate per kilowatt-hour that is 2 mills less than it costs to produce power by alternative means.

Colonel WHIPPLE. That is according to the estimate made by the Federal Power Commission.

Let me give you the figures in a little more detail and more precisely:

The estimated costs, according to the Federal Power Commission, of producing this power by alternative means is 6.9 mills per kilowatt-hour. The average cost of power from the Table Rock project with amortization within 50 years is 4.7 mills per kilowatt-hour.

We are relying on the Federal Power Commission estimates as the basis for considering that this power is actually worth more than the figure of 4.7 mills that it costs to produce it.

Mr. DAVIS. You would anticipate, then, that the actual sale price might be something in excess of 4.7 mills; would you?

Colonel WHIPPLE. Yes, sir; it should be, in order to amortize the investment, which is a normal requirement on these projects.

The fact that power has been sold cheaper from another project does not necessarily mean that that limits the amount that it can be sold for from this project.

FLOOD CONTROL AND OTHER BENEFITS

Mr. DAVIS. You have given us some figures in regard to the allocation to power which indicates roughly that 79 percent of the benefits are to be allocated to power.

What are the other benefits, and what are the allocations that you have made to them?

Colonel WHIPPLE. The other primary benefit from this project is to flood control, which is an estimated benefit of $956,000 annually.

The White River is unusually subject to floods. The lower portions of the White River are very flat, and contain very large areas of agricultural lands. Benefits would be provided within an area that has 30,000 residents.

The hills in which this project would be built appear to attract unusual flood discharges and you get very much larger floods coming from this stream than you would expect from the relatively small size of the drainage area. The allocation to flood control on account of those benefits is $17,160,000, giving a benefit-cost ratio of the flood control portion of the investment of 1.36 and a benefit-cost ratio on the power portion of the investment of 1.47.

Mr. DAVIS. Your overall benefit-to-cost ratio, then, is 1.45?

Colonel WHIPPLE. Yes, sir.

Mr. DAVIS. That compares with the 1.26 figure which appears in your planning report as of January 1953. You are using the same cost figure that you presented in that January 1953 document, but you have materially increased the benefit-cost ratio.

What is the explanation of that?

Colonel WHIPPLE. The principal explanation, so far as flood-control benefits are concerned, is the result of the same change in use of projected prices that we have made in connection with other projects throughout our entire program. The power benefits are in accordance with the latest estimate of unit values which was obtained specifically for this purpose from the Federal Power Commission, and it may be that there was some slight change in those estimated unit costs.

There has also recently been a change from 84,000 kilowatts to 100,000 kilowatts of installed capacity in the project, and that earlier planning report was probably based on the lower figure.

It has now been found that it will be desirable to install 100,000 kilowatts of capacity in the project, and that increases the benefit-cost ratio. That installation is not so large even now, as it has been suggested we should ultimately have at that project.

There are very large benefits produced downstream in the Bull Shoals projects, where Table Rock not only firms up the power by electrical interconnection, but also by reason of providing additional storage during periods of low flow, so that there is a very fine relationship between these two projects.

I believe that was brought out in the previous planning report, but I would like to emphasize it because there is an unusually good relationship between those two projects on this particular stream.

STATUS OF FUNDING

Mr. DAVIS. Just what is the status of the funding situation on this project?

General CHORPENING. I can give you the overall status, until he gets these specific figures.

We have had this project in planning for some time, and the first construction fund of $2.5 million, as I recall, was appropriated in fiscal 1953. We started to go ahead with the construction and let contracts which were permitted to be completed on access roads and on temporary buildings for our forces there, and bought some land and a few other small items to get started.

The project was then suspended about a year ago, as I recall; with the exception of completing two small contracts, nothing further has been done on the actual construction or on the planning beyond cleaning up what we were working on at that time.

The Congress last year, as I recall, appropriated, I think it was, $1 million, so that we have had $3.5 million appropriated for construction. However, we have done nothing further on the construction but are awaiting direction of the Congress as to what we were to do in connection with the project.

Now the total funds that have been appropriated—how much do we have now?

Colonel WHIPPLE. By the end of the fiscal year, including the Government costs and the limited planning activities, there will be $2,349,546 available for obligation. That is assuming there is no construction during the balance of this fiscal year.

General CHORPENING. Of course, whatever charges were required in the preparation of this report are charged against these funds.

CHANGES IN PROJECT SINCE AUTHORIZATION

Mr. DAVIS. When was this project authorized?

Colonel WHIPPLE. In 1941.

Mr. DAVIS. At what cost estimate?

Colonel WHIPPLE. $37 million.

Mr. DAVIS. What changes have been made in the project that resulted in the present estimate of $78 million?

Colonel WHIPPLE. There have been, of course, material changes in the price index, which has more than doubled during the intervening time.

The installed capacity, which is now 100,000 kilowatts, was originally 84,000 kilowatts. The height of the dam has been increased to provide 275,000 additional acre-feet. Those are the principal items accounting for the cost increase.

Mr. DAVIS. Has this matter ever been brought to the attention of the Public Works Committees, since the time of the original authorization, particularly with respect to the increase in the height of the dam, the increased storage capacity, and the increase in power capacity?

General CHORPENING. No, it has not. It was considered that these were changes that were essential in the further studies made of the original basin plans, and were in accord with the very apparent purpose in the original authorization of providing a structure there that would secure the maximum justified benefits and power installation.

In many of the projects throughout the Nation, that were authorized at earlier times, as the development has taken place, and after we have made more detailed studies in connection with the plans, we have found it most desirable and essential to make these modifications, and in the authorization on this, as with most of the projects, there is a provision that modification can be made as found desirable by the Chief of Engineers and the Secretary of the Army.

Colonel WHIPPLE. I would like to correct the statement that I made that the original capacity was 84,000 kilowatts. It was 140,000, so that actually there has been a decrease from the plans authorized, a decrease to 100,000. It was decreased initially to 84,000, and then subsequently it has been increased to 100,000.

DETAILS OF FLOOD-CONTROL BENEFITS

Mr. DAVIS. Getting back to your statement with respect to flood-control benefits, can you give us the details of those proposed benefits?

Colonel WHIPPLE. The White River is a tributary to the lower Mississippi River. The largest flood which has affected that area was in 1927, at which time the White River was seriously flooded at the same time as the lower Mississippi. That we consider the flood for which the project is to be designed.

The flood-control benefits within the White River Basin itself affect over 1 million acres of land. There are about 64 miles of Federal highways and 152 miles of railroad benefited, and approximately 30,000 people are resident in the area.

There are additional benefits that have been evaluated for the lower Mississippi Valley on account of the usual conjunction of the White River floods that are tributary to the Mississippi. The average annual benefits are estimated at $956,000 for flood control, which are based on the probable repetition in the future of the floods which have occurred in the past, with the assumption of continued economic development of the country, approximately as it has been developed.

This benefit, of course, ties into and takes account of the relationship between the reservoir and the levees of the lower White River as well as the Mississippi and the benefits attributable to those.

Mr. DAVIS. Have you tried to allocate, dollarwise, the suggested benefits with respect to the levees on the lower Mississippi, or are those simply the incidental flood-control benefits?

Colonel WHIPPLE. The benefits that I have been speaking of take into account the relationship between the levee and the reservoir protection, and those benefits have been allocated, of course, to the levees, as well as the reservoir as we proceed with the plans of protection for the Mississippi River as a whole.

Mr. DAVIS. You do not attempt to calculate the flow of water from the White River and the Mississippi River and the effect that would have upon the levees along the Mississippi River?

Colonel WHIPPLE. Yes, we did. The Mississippi levees, as you know, were originally constructed by private interests, and later taken over by the Government and the levee plan, has now been developed into levees, reservoirs, and the floodway plan. The benefits allocated to the White River Reservoir are in accordance with the expected method of operation and are computed in the same way as the benefits attributed to all of the other reservoirs that are operated for protection of floods on the Mississippi River as a whole rather than solely for the protection of some tributary headwaters.

RELOCATIONS

Mr. DAVIS. Do you consider the relocation problems in connection with the project unusual?

Colonel WHIPPLE. I would say that they are rather less acute than they are in most parts of the country. The area involved is better than most other reservoirs, as it contains not much good agricultural land.

The area has been farmed for long periods of time. The population has evidently been decreasing as far as farming is concerned, and a good many of the farms are evidently in poor repair and have been abandoned in the past by the depletion of the soil or for other economic reasons.

A great deal of the area is wooded, and I think we can find in this case an unusual number of cemeteries that will be moved in proportion to the number of actual occupants, indicating that the area is not really fast developing in population.

There has been no particular difficulty about the relocation problem, and we do not expect that we will have as much trouble, in fact, as as we have had in the relocation problems in other cases.

Mr. DAVIS. Did you consider the reminder from the State highway department that they would expect you to take care of all of the highway relocations, at the time you made or confirmed the total cost estimates?

Colonel WHIPPLE. Yes. Under the usual provisions we are required to take care of the expenses of all of these relocations, and I know of nothing unusual about that situation that would change the cost estimate.

LOCAL REACTION TO PROJECT

Mr. DAVIS. My mail baskets and telegram baskets indicate that there still appears to be some differences of opinion among the people in that area with respect to that project. What can you tell us about that?

Colonel WHIPPLE. That is a matter on which perhaps you are better informed than we. It has appeared to us from reactions of the people of the community, to our field offices, both directly as related to us and on consultations with leaders of the community and representatives from the area, that the project was generally accepted and wanted by the majority of the residents.

We have a very definite confirmation, as far as the Rural Electrification co-ops are concerned in the area, that they are anxious to have the project go ahead.

The letters from private utilities, although somewhat less enthusiastic about a Government development, as is to be expected, indicate they accept the project and I believe favor the development of it as a multiple-purpose project.

And we have been under the impression that the majority of the people in the area want the project to go ahead, for the flood-control benefits, and on account of the electric-power supply.

Then there is another factor that I have not mentioned heretofore which is the very great recreational advantages to come from a large lake in the Ozark region. It is a very beautiful country, but at the same time it gets dry in summer.

I went up through that area, and I saw some very fine bass, weighing over 2 pounds, caught in Bull Shoals Lake. I saw a good many people who were going out in boats on that lake, and there were people building cottages near the lake. I heard some very interesting talks from people in Little Rock and in other communities, about the great help a large body of water would be to recreation in the area. Lake Taneycomo, which is a much smaller, private power development, immediately below Table Rock on White River, is quite a recreational area, and has been for a good many years. The lake to be formed here at Table Rock will be much deeper, the water will be colder and clearer, and we expect will be a very popular feature in that area as soon as it is put into operation.

Our general impression has been that this project will be very popular in this area.

General CHORPENING. It has been most unusual that any project of this size has not had, at the time of its consideration, quite a few people who at that time were against it; but by the same token, in practically every case, after the reservoirs have been built, that most of the same people who objected at the time the project was proposed, would object a hundred times harder if you tried to drain the lake and abandon the project.

The objection usually stems from the people whose lands are to be taken for the construction of the project.

Mr. DAVIS. We saw some evidence of that on the committee's trip last September.

General CHORPENING. I would like to add that I understand, I understand fully, and I am in full sympathy with the people whose lands are to be taken; and I am not disrespectful of that attitude at all.

ATTITUDE OF PRIVATE UTILITIES

Mr. DAVIS. I read the communications that the district engineer received from the various people and utilities whom he contacted. My summarization of the response he received from the private power people, would be that they gave assurance that they could and would produce the required power in that area without Table Rock, but that on the other hand, if Table Rock were constructed as a Government project and could sell them the power perhaps a bit cheaper than they could produce it themselves, that they would be willing to take the power off of the Government's hands. Is that about what it boils down to?

Colonel WHIPPLE. I think that is very aptly put.

1955 BUDGET

Mr. DAVIS. In the 1955 budget on which we have just completed hearings for a number of multiple-purpose projects, there were no new projects; is that correct?

General CHORPENING. No new multiple-purpose projects.

Mr. DAVIS. No new multiple-purpose projects, nor were there any resumptions.

General CHORPENING. That is correct.

Mr. DAVIS. There were no funds recommended for the Table Rock project in the 1955 budget?

General CHORPENING. That is correct.

Mr. DAVIS. So that releasing funds at this time for this project would have the effect, would it not, of giving the go-ahead to the construction. This would be at odds with the policy presented in the budget requests that have been before us; is that correct?

General CHORPENING. I do not know what the complete thinking of the Bureau of the Budget was in the action that they took on this matter. As has been indicated, we will have on June 30, a free balance of about $2,300,000 for this project. I am sure that the Bureau of the Budget had well in mind that the Congress had directed us to make this study.

ANTICIPATED CONSTRUCTION PROGRAM

Mr. DAVIS. If those funds were to be released I assume that an orderly construction program would require additional funds to be provided for the fiscal year 1955, would it not?

General CHORPENING. We should properly have some additional funds this year. This, in the construction year, we would propose advertising the entire dam in one advertisement; that would be the more economical way to proceed. This is to be a concrete structure, and I do not recall exactly, but I believe that we would estimate the cost of that around $30 million to $40 million, and so the $2,300,000 available would mean that we would have to advertise that size contract without too much money immediately available, which might have some impact on the bids actually given us by the contractors.

Depending on the time, with no more funds than we now have, we would probably not advertise it until some time during the period of the next fiscal year, so that we would not have a period there with little or nothing happening. We would pick a time, depending upon the estimate of progress that ought properly be made.

Mr. DAVIS. What is the anticipated construction period?

Colonel WHIPPLE. We expect to essentially complete the project, if we get started next year, in fiscal year 1960.

The first power on the line would come in December 1959.

Mr. DAVIS. That kind of a schedule contemplates having about $2,300,000 available in the 1954 fiscal year, and how much in the 1955 fiscal year?

Colonel WHIPPLE. About $3 million in addition.

Mr. DAVIS. Then the $2.3 million in 1954, and $3 million in 1955 would keep you on a schedule that would provide for completion in 1960?

Colonel WHIPPLE. Yes; that would be an economic and effective construction schedule and would allow us to let the main dam construction contract as soon as the funds were definitely known to us.

General CHORPENING. Instead of having to wait until later, as I explained earlier.

BENEFIT-TO-COST RATIO

Mr. HAND. General, actually the overall benefit-cost ratio of this project, which I understand is 1.45 to 1, is less than the estimated benefit-cost ratio of the power phase of the project alone; is that correct?

General CHORPENING. That is correct; slightly less.

Mr. HAND. I suppose it follows from that, and I suppose taken independently of that, that as a flood project this cannot be justified, economically?

General CHORPENING. The flood-control part, building it as a multiple-purpose project, is well justified at 1.36.

Colonel WHIPPLE. The studies show that the power would be justified by itself without flood control, but if the power project were built by itself, the benefit-cost ratio would be only 1.3 to 1 instead of 1.45.

Mr. HAND. If the power was built by itself?

Colonel WHIPPLE. If the project were built with no flood control, the benefit-to-cost ratio would be only 1.31 to 1, and the cost of the power produced would be greater than what I have given you, because there was a difference in cost that would have to be allocated to power.

The flood control by itself would not be economically justified. The benefit-to-cost ratio would be only 0.89 to 1. So by a relatively small margin it would fail of economic feasibility. And on the other hand, the flood-control aspect of Table Rock is particularly important when considered in relation to the partial flood control now provided by the Bull Shoals project. This will give more complete control of this part of the White River Valley against the maximum flood we expect to occur, and we do not like to leave a valley with partial flood control where the people think they are protected when really they are not, against the maximum flood hazard.

Mr. HAND. Has the report of the district engineer at Little Rock been reviewed by the Chief of Engineers?

General CHORPENING. Yes.

Mr. HAND. And approved?

General CHORPENING. Yes.

SHORTAGE OF POWER

Mr. HAND. This is true, is it not, that the estimated shortage of power that will occur in 1960, if further efforts are not made by the present utilities in the area, will still not be met by the construction of this project?

Colonel WHIPPLE. Not alone.

Mr. HAND. As I understand it, the estimated shortage at that time, if no greater expansion of capacity develops by private utilities, would be 531,000 kilowatts, and the production here is 123,000.

Colonel WHIPPLE. Yes.

Mr. HAND. Leaving still a shortage estimate of 408,000 kilowatts.

Colonel WHIPPLE. Yes.

Mr. HAND. I take it there is no local participation contemplated on this project?

Colonel WHIPPLE. No; there is none.

RECONSIDERATION BY PUBLIC WORKS COMMITTEE

Mr. HAND. General, I am still a little bit concerned in connection with the questions of the chairman and your answers to them, that this project, in 1941, was first authorized by the Public Works Committee on a basis of $37 million, and also on that basis of a much lower dam, and a much less capacity of storage of acre-feet, as I remember correctly, some 275,000 acre-feet less. In general, the project now is not only many times larger, but about twice as expensive. Under these circumstances do you not think the Public Works Committee ought to take a look at this project again?

Colonel WHIPPLE. Sir, this is not very large, when you consider the amount of storage provided in this project. The increase in flood-control storage is a relatively small percentage of the total storage contemplated originally for the project.

The power installation is actually less, and by far the greater part of that increased cost is due to price changes from 1939, which was the year of the price basis on which the original estimate was made, to the present time.

In the normal course of events, even if there were no changes made in design from the original project, the general price change would amount to an increase of well over double the original estimated cost.

Mr. HAND. Is not the dam a great deal higher than originally contemplated?

Colonel WHIPPLE. It is somewhat higher.

Mr. HAND. In short, your answer indicates that changes made in modification of the plans, while substantial in character, are, you believe, relatively minor, and you present the same plan that was originally presented to the committees?

Colonel WHIPPLE. Basically they are the same plans as originally presented to the committee; yes.

Mr. HAND. The greatly increased cost is largely the result of the increased cost index in that period of time; is that correct?

Colonel WHIPPLE. Yes, sir.

Mr. HAND. Nevertheless you actually are short of authorized money for the completion of this project; is that correct?

Colonel WHIPPLE. That is correct.

Mr. HAND. The answer is you might likewise be short for a number of projects on the Columbia that have been referred to. In other words, we come to the old familiar adage, do two wrongs make a right? In other words, has this Appropriation Committee the proper authority to tell you to go forward with a project at an estimated total cost which has never been authorized?

General CHORPENING. I believe in all our survey reports we state at the time our estimated costs. In some instances the Congress has authorized the project without placing a limitation upon the amount of monetary authorization.

Mr. HAND. That is right.

General CHORPENING. In other instances, the Congress has authorized the plans, but has given only a limited monetary authorization.

We have for many years gone ahead on those that have been authorized fully, fully as a plan, but partially as to monetary authorization, and the Public Works Committee and the Appropriation Committee by their acts in appropriations, have indicated that the project should go ahead of the authorization to follow.

Now, since that has been done and has been thoroughly known, we have assumed that we have proceeded in accordance with the desire of the Congress.

TIME LIMITATION ON AUTHORIZATIONS

Mr. HAND. I wonder if any consideration has been given to a limitation of time in these authorizations? The passage of time makes the authorization unrealistic, at least, that has been our past experience because of the cost-index change.

General CHORPENING. In our study of the backlog of the authorized projects, the authorized backlog which we earlier described in these hearings, we did give very considerable attention to that possibility of deauthorizing just on the lapse of time. We discarded that theory because it is just an arbitrary way of deauthorizing without looking into the merits of the individual projects. Many projects that have been authorized for quite some time are still extremely desirable projects.

Mr. HAND. I quite agree with that, but on the other hand the lapse of authority might compel a fresh review that would be helpful.

General CHORPENING. On all of these projects, as for instance the one under consideration today, we have expended quite a considerable amount of planning funds for the purpose of bringing the cost data, the design data, and other economics up to date, so that we may supply the Appropriation Committee with that when we ask for appropriations.

USE OF FUNDS

Mr. HAND. How much planning funds have already been spent on this project so far, Colonel?

Colonel WHIPPLE. Approximately $1,500,000, including the detailed designs; that is not all advance planning; that includes detailed preparation of specifications for the construction.

Mr. HAND. Have you any planning funds left that were not earmarked?

Colonel WHIPPLE. Those funds were not all earmarked for planning. After construction is initiated we use construction funds on the remainder of the detailed plans and engineering specifications, so that we have no funds left which were specifically earmarked for that.

Mr. HAND. So far as construction funds are concerned, some time, prior to maybe 1953, I take it, you had $1 million for construction money, with a stop order on it; is that correct?

Colonel WHIPPLE. Yes.

Mr. HAND. So that of the $2.5 million, not counting the $1 million that you could have spent, how much has been actually spent on construction?

Colonel WHIPPLE. About $1 million actual construction over and above plans and designs.

Mr. HAND. What did you buy for that $1 million, roughly, Colonel?

Colonel WHIPPLE. We built principally the access roads, pur-

chased real estate in the vicinity of the dam, cleared the dam site, constructed a Government office and laboratory and did some very extensive grouting work on the foundation, together with some explorations, by test pits and borings to further check the geology of the dam itself.

Mr. HAND. Was a substantial part of this money spent on the acquisition of land?

Colonel WHIPPLE. About $200,000.

General CHORPENING. That was for the lands right at the site that we must have for our construction activities there.

Mr. HAND. You have about $2,349,000 unobligated?

Colonel WHIPPLE. Yes, sir.

POWER BENEFITS

Mr. HAND. Is your estimate of the benefits of this project in its power aspect based on an estimate of increased cost of electric energy in the future, or is it based on present cost, assuming it remains stable?

Colonel WHIPPLE. It is based on an estimate of present cost. We did make some estimates on the basis of projected prices and benefits and it actually showed a slightly more favorable ratio; but in the computation of the benefit ratio the power estimate is based on present cost.

FLOOD DAMAGE

Mr. HAND. Has there been any substantial history of flood damage in the area sought to be protected here since the large flood of 1927?

Colonel WHIPPLE. Yes, sir. There have been a number of additional floods. I can insert something in the record for that; I do not have the record of those floods, but the White River Basin has had a number of extensive floods since that time.

(The matter referred to follows:)

The following floods have occurred on the upper White River from 1927 to date:

	Peak discharge in cubic feet per second [1]		*Peak discharge in cubic feet per second* [1]
April 1927	212,000	May 1943	193,000
March 1935	127,000	April 1945	209,000
February 1938	110,000	May 1950	161,000
April 1941	106,000		

[1] Discharge flows at Forsyth, Mo., gage on the White River located 24 miles below Table Rock Dam site. Bank full flow is about 100,000 cubic feet per second.

Mr. HAND. Now, how do you reconcile, except by a fortunate coincidence, the fact that this country to be protected, I think, you said, is rich agricultural country, while the lands actually acquired or to be acquired in the reservoir area are as you say of much less agricultural value?

Colonel WHIPPLE. I believe the term "fortunate coincidence" explains the fact. This reservoir is extremely well located for the purpose. There is a very wide alluvial plain which is part of the general alluvial plain of the Mississippi and it is bottom land through which the White River flows. But in the upper headwater, it is hilly country, generally not too well suited for agriculture, very largely forested, and it is only the bottom lands that are farmed and they, on account of the slope of the stream and the character of the soil, are not nearly as well suited for agriculture as the alluvial bottom lands down below.

It is the topographical circumstance that makes this project extremely well suited from the point of view of storing water in a reservoir, where relatively little damage is done compared to the very great area protected down below.

Of the 87,900 acres to be acquired for the reservoir, there are only 100 acres which is considered as commercial or residential, and 13,400 acres that is classified as agricultural land other than pasture, which is an unusually low percentage for bottom lands in which a reservoir can be built.

Mr. HAND. I think your answer is a good one, that generally speaking, it is a fortunate coincidence that the land is not particularly good agricultural land, but wornout agricultural land.

Colonel WHIPPLE. Yes, sir.

Mr. HAND. Has any consideration been given by the corps—I do not know whether any has ever been given by Congress—to the 2.5 percent interest figure used for the benefit-cost ratio, in view of the fact that comparatively recently the cost of borrowing money by the Government is very close to or in many cases in excess of 2.5 percent? We are paying 2.9 percent, for example, for the typical so-called defense bonds.

Colonel WHIPPLE. The Bureau of the Budget's policy requires that that rate of interest be reviewed and changed to conform to long-term interest rates when those are increased. However, it is still the rate that we are supposed to use and if the long-term average interest rates, which are somewhat lower than the rate on the E bonds referred to, continue to increase, no doubt we will be required to go to a different amortization basis.

NECESSITY OF PROJECT

Mr. CEDERBERG. From the testimony I have heard on this particular project and the information and letters I have received, it seems to me the project is going to have to stand or fall on the power question. I have heard from a number of people in that particular area and not one of them do I recall mentioning any concern about the floods or flood protection that this project might give. From previous testimony, I note the project was authorized in 1941, and is it correct to assume, when it was authorized at that time, it was authorized on a basis of power shortage as well as flood-control benefits?

Colonel WHIPPLE. Yes, sir; that is correct—power shortage when considering the price of power.

Mr. CEDERBERG. Nevertheless, the project has not been built and this is 1954. We have fought World War II and have gone through the Korean situation. There has been a tremendous expense as far as the economy of that area is concerned. I note it says here that more than half of the area is without annual flood damage and that manufacturing has increased from about $385,000 in 1939 to $1,240,000,000 in 1947.

Colonel WHIPPLE. Yes, sir.

REACTION OF PUBLIC UTILITIES

Mr. CEDERBERG. I refer to the testimony made by Mr. D. C. Magee, president of the Empire Electric Co., before another subcommittee of this committee, where he said there was no power shortage in the

past; none exists now, and with the electric companies continuing contruction program there will be none in the future.

In view of that statement, it seems inconceivable to me that the project is required.

Colonel WHIPPLE. I would certainly say that statement was conclusive that the power company in question did not want that project built.

Mr. CEDERBERG. Let me continue with another statement by Mr. Carl G. Mason, vice president of the Missouri Public Service Co., and I might say that a great number of the requests I have had for approval of construction funds for this program have come from cooperatives in the area. He says:

> Almost 3 years ago the company received inquiry from most of the cooperatives within the area to be served by this proposed substation facilities, in which the cooperatives specified their anticipated demands and energy requirements for the years 1955 and 1960 at then present and proposed future points of delivery. Promptly after receiving the request, the company made written commitments to serve all of the anticipated requirements at all of the points requested by the cooperatives and offered new power contracts at lower rates to the cooperatives. Receipt of the contracts was never acknowledged by the cooperatives, which again indicates that such inquiries and estimated demands were likely initiated by the Washington office of the REA with the intent of alleging a power shortage within the area served by the company.

And this last paragraph seems quite significant to me:

> Today those same cooperatives would need to increase their power demand by 282 percent to equal the anticipated 1955 power demands, 420 percent to equal the power demands estimated for 1960.

Now there is some inconsistency here at some place. There is either a power shortage or there is not a power shortage.

Colonel WHIPPLE. From the point of view of the cooperatives, it appears that they have not in many cases been able to obtain contract arrangements that they would have liked from private utilities. We said earlier and I think we should emphasize that private utilities will go ahead and supply service at what they consider a reasonable price for that entire area. On the other hand, all cooperatives and public bodies receive a certain preference for the use of power from Federal dams and obtain that power on better terms when it is obtained through the services of the Interior Department Power Administration than when they have to buy power which costs considerably more to produce from the private utilities. And from letters to us, which you have seen, they indicate, regardless of the questions of the facts which appear to be in question, the letters undoubtedly indicate a very strong desire on the part of the cooperatives generally to have the advantages of this source of power available to them through the companies which serve them.

Mr. CEDERBERG. I think that is quite understandable. I might say for the record that I do not in any way oppose REA cooperatives. I think they have done a fine job. I also want to say that in my own area back home the public utilities have contracts with cooperatives and they get along just fine. I can see where a cooperative would much rather deal with the United States than with a private utility or any private organization.

As I said before, I think this thing has to stand or fall on the question of whether there is a power shortage and whether the private

utilities can meet that power shortage. I, as one Member of Congress, make no apologies whatever for my position in feeling if the regular private utilities can do the job, they ought to be given an opportunity to do it; if they cannot do it, there is plenty of opportunity for public power to go in there and do the job. Other than that, if it can be done by private utilities, I think they ought to be given the opportunity to do it.

WATER STORAGE

What about the water situation in this particular area? Are we faced, as you stated in previous testimony, with the fact that in the summertime, with dry periods, and so forth, that would have an effect upon whether or not power could be produced at a reasonably steady rate? What would that situation be?

Colonel WHIPPLE. No, sir. We have made studies of the water supply. When I spoke of dry periods, I meant the highlands become relatively dry. Also, of course, the streams become quite low at such periods. But we have computed the actual records as far back as the records went, and the figures we have given you are figures of firm power that can be produced according to the best engineering estimates of what the stream flow will actually be in the future, considering periods of drought as well as periods of high flow and floods, and this reservoir we are talking about, particularly with the relationship between Bull Shoals and Table Rock, will assure a reliable supply of power under all reasonably anticipated circumstances.

General CHORPENING. We would provide enough storage in the power pool to take up the slack at low rainfall when that occurs.

NEED FOR POWER

Mr. CANNON. General Chorpening, we are told by economists that we won the First and Second World Wars through production; that we started far behind after all other participants were fully ready, and overtook them and produced enough material to win the war.

Is that generally conceded?

General CHORPENING. Yes, sir.

Mr. CANNON. We are also told that the American people today enjoy higher standards of living than any other people in the world, generally, due to the fact that our industrial system outproduces in quantity and quality and economy all other nations of the world.

Would you say that is probably true?

General CHORPENING. Yes, sir.

Mr. CANNON. The United States is a great producing Nation. In our national production what is the most essential mechanical factor—what is the important ingredient in modern industrial production?

General CHORPENING. Well there are a number of prime essentials, of course. One of the prime essentials is that there be adequate energy of some kind available—adequate energy. You must have an adequate transportation system; because without an adequate transportation system of all types you cannot make the movements of your raw materials to the factories and then the finished materials to the points of use, to the seaports and on around the world. And it is well known that the United States exceeds all other nations by a great amount in its energy available and in its transportation facilities.

Mr. CANNON. You can hardly operate either factories or transportation system today—at least not on our present plane—without electric power.

General CHORPENING. No, sir.

Mr. CANNON. I recall this question came up during the Second World War, when this committee had before it the proposition of building extra dams in the Tennessee Valley and the Governor of Tennessee was opposed to building this last dam. However, over his protest, we built the dam and finished the construction of that great power grid without which we could not have produced sufficient aluminum for our airplanes, which won the war, and without which we could not have originated the atomic bomb. We produced the atomic bomb, sufficient airplanes to win the war because we had had the foresight, against the opposition of those who said we ought to leave it to private industry, to provide sufficient energy to produce the necessary armament.

Of course, questions of this sort ought to stand or fall on the necessity for the additional power to be produced by the proposed installation. If there is sufficient available power without it, we ought not to build it; if it is needed, we want to build it.

There has been a great famine of electric power throughout this section of the country. In my congressional district the REA cooperatives are rendering invaluable service. But this last summer we have not had power enough to operate them. They have been getting their power largely from municipal plants operated by small cities throughout that section and one after another those plants found they had developed such a load of their own that they have been compelled to notify the REA cooperatives they could no longer supply the power; that they had reached the maximum of their own production and needed it for themselves. Then over at Louisiana, Mo., we had a munitions plant operated by the Federal Government. They had a standby generator which was carried as an extra tire if in the midst of the war and under pressure for ammunition one of the other generators went bad, they had this spare tire, this extra generator, to fall back on in emergency. When this need for power became so pronounced, I took up the matter of using this extra generator which alone could produce enough power to run a big city, and finally when the Comptroller of the Currency told us we could not use it, because all of the receipts from it would have to go into the Treasury and there would be nothing to operate it on, you could not use the receipts as a revolving fund, we included in an appropriation bill provision authorizing the use of this generator to supply current so desperately needed.

And I might say, Mr. Chairman, I have no interest whatever, in whether the private companies produce this power or whether the Government produces this power. That is shown by the fact that when I put in that bill the provision for the use of this generator, I provided that the resulting current should be turned over for distribution either to public or private utilities. As a matter of fact, I think about half was used by the REA system and half was used by the Union Electric Co. of St. Louis, which is a private utility. Roughly, it was about equally divided between the two. Both public and private companies got the benefit of it and what was more important, former patrons of REA and city patrons of the Union Electric got the service.

So far as REA is concerned, it is useless for us to produce current for farmers, and that is what the REA's are for, unless we produce it at a price the farmer can afford to pay. The farmer lives on the lowest standard, the lowest plane of operation, of any other class in the country. It is useless to bring electricity to his door if you bring it at a price that he cannot afford to pay. And here is a proposition to bring it to him at the cheapest price at which it can be bought—according to the report of the Board of Engineers—before us cheaper than any private utility can bring it. They report that Table Rock Dam can produce and sell current at 2 mills less than it can be produced in any other way. And when you take the difference of 2 mills per kilowatt hour into account—actually 2.2 mills here—that is a tremendous difference in the monthly bills of every farmer who uses electricity, and I have reason to say it might be the difference between the ability of the farmer to use it or not to use it.

Now this survey has been made, a very exhaustive survey and it corroberates all surveys previously made. It shows there is need for power. And anybody out there, like myself, with no technical knowledge of the subject, can see there is an urgent need. I have no objection, when this dam is built, to using the current for either private or public utilities. Just so we get the power. So I say turn it over to the private utilities, or turn it over to the public utilities, but give it to the people. What I am especially interested in is giving it to the farmer at a price he can afford to pay.

More important still, national defense and national prosperity depend on getting cheap electric power. The Mesabi Range is nearing exhaustion. There is no prime iron ore left in the United States. Aluminum is the only practical substitute for iron in war or peace. And it requires vast supplies of electricity to convert the aluminum.

Now I was a little surprised to hear some reference to this as a new project. This is not a new project. We completed in every way every arrangement by which this money would have been available and at the last minute the conference committee raised the often-answered question of was it needed. And they authorized the corps to go ahead and make a further survey with that in view; the money to be available if the report was favorable. The corps found it was needed and automatically this committee has authority to act. I understand the Senate committee is ready to act any time the House committee is ready to act. They are simply waiting on the House committee now and all we have to do is to consult the report which has been made and which shows it is needed. And I find in the last statement of the syllabus here they advise that the present estimate of cost is adequate and recommend that further construction be undertaken. Construction has already begun, but they recommend that further construction be undertaken. So it is not a new project and but for this one string that was tied to it in the last minute in the conference report, it would have long since been in operation.

Now I would like to ask you, General: This dam here complements and supplements installations already in operation down there. I am glad to say that within the last 2 or 3 months, in my own congressional district, we are now using current from the Norfork Dam. In the last Congress we authorized construction of a transmission line which would run from the Norfork Dam and the Bull Shoals Dam, up into

my congressional district and we are already using it. But the Government is taking over a large part of the production of these dams and we will have to have more.

Would the Table Rock Dam, when integrated with the grid down there in connection with these other dams make them more productive than they are at present?

General CHORPENING. That is correct; yes, sir.

Mr. CANNON. So that there is every reason in the world why we should turn this money loose. It is needed; it is needed desperately.

I do not presume to speak for the committee, but I say all of the evidence shows that more power is needed. It is desperately needed for present consumption and especially for national defense. If we can produce it cheaper this way than any other way, as the Board of Engineer testifies, production throughout that section of the country will be accelerated. Here when we were in the shadow of war, when to have stopped production in the Tennessee Valley would have lost us the war, we are up against a similar proposition here. This will contribute to our Army's strength, and to our domestic economy. There is every reason in the world why it should be built, and there is no reason why it should not be built.

Mr. DAVIS. The final decision on this project will rest with the members of this subcommittee and then with the full committee.

RESURVEY AND REAPPRAISAL OF THE PROJECT

Mr. RILEY. General, we have before us today a special report of the Army engineers which I understand constitutes a resurvey and reappraisal of the project known as the Table Rock Dam on the White River in Arkansas. Is that correct?

General CHORPENING. The report was submitted to the committees of Congress, I believe, in December.

Mr. RILEY. On page 9 of that report the statement is made:

> The cost of power made available by the Table Rock project is estimated at an approximate average of 4.7 mills per kilowatt-hour. The cost is determined from an allocation between power and flood control on the present estimate of annual charges, using the separable costs—remaining benefits method of cost allocation as published by the Federal Interagency River Basin Committee.

Is that any different from the formula you use on the most of your projects?

General CHORPENING. That is not any different from the formula that we have believed in for quite some time. However, it has only more recently been published by the Federal Interagency Basin Committee and essentially adopted by the Bureau of the Budget, and it is the basis on which we are now carrying out our conferences with the Interior Department.

Mr. RILEY. In your opinion, is this a more realistic allocation of the cost between the various benefits than some of the formulas that have been used in the past?

General CHORPENING. That is correct. We think that this is the best formula that has yet been devised to adequately insure that the allocations of cost to the various purposes are fair and proper.

Mr. RILEY. And with this realistic formula you estimate that the cost per kilowatt-hour will be 4.7 mills?

General CHORPENING. On the basis of a 50-year amortization period; yes, sir.

Mr. RILEY. General, do you know what the cost per kilowatt-hour is of the various projects that you have constructed, say the low cost and the high cost on projects that have been approved and built by the Army Engineers?

Colonel WHIPPLE. Generally throughout the country the projects that we have run from 4 to 5 mills per kilowatt-hour. In the Pacific Northwest we have some very cheap projects which run as low as 1.5 or 1.6 mills per kilowatt-hour. We do have instances that run up as high as 9 mills per kilowatt-hour among the less economical of the projects that have been built.

Mr. RILEY. Have those costs been based on a less realistic formula than we are considering today?

Colonel WHIPPLE. No, sir. Those costs are generally based on approximately the same method of cost allocation and are comparable, so that outside of the Pacific Northwest the cost of production of 4.7 mills per kilowatt-hour is equaled by many projects, but it is a relatively low-cost power development, generally comparable to our good projects throughout the country.

Mr. RILEY. Even taking in the Pacific Northwest 1.6 or 1.7 mills and 9 mills, this would be less than the average between the low and the high, would it not?

Colonel WHIPPLE. Yes, sir; that is correct.

Mr. RILEY. So that under the present policies you would say that this is a sound project under the more realistic formula that the Engineers have recommended?

Colonel WHIPPLE. Compared to other projects and on the same standards that are applied to all of our other projects presented here, we would say that this is a sound project.

Mr. RILEY. Now I am a little bit vague as to the type of land where this lake will be pooled. I was somewhat under the impression that this was primeval forest; that nobody had ever lived there; that it was sort of virgin territory.

Colonel WHIPPLE. Sir, this area has been settled for a long time. It is an old farming community. The farming has taken place to the greatest extent in the river valleys.

Mr. RILEY. I am talking about the place where the dam is going and where the pool will be.

Colonel WHIPPLE. That is correct.

Mr. RILEY. That has been farmed also?

Colonel WHIPPLE. It has been farmed for quite a long time. However, there is only a relatively small proportion of the valley area that is farmed at the present time and the land values generally are not as high as those in the areas to be protected.

Mr. RILEY. Do I understand from that that the people who lived in this area and farmed there found it was not economical in that area and they moved out in the river valleys where the richer soil would give a higher production so far as farmland was concerned?

Colonel WHIPPLE. That is partially true. The majority of the land is a cutover hardwood area that probably could never have been put into production.

Mr. RILEY. That was the impression I had to start with.

Colonel WHIPPLE. I am sorry if I did not get your question properly. It is a question of proportion. There is now a total of 13,400 acres of agricultural land in this area out of a total of 87,945, in addition to

the 54,500 acres of woodland and also additional areas in there that have been farmed in the past but are not farmed at the present time.

Mr. RILEY. The vast majority of it, though, is either forest land or cutover woodland and pasture and a very small proportion of it has ever been used for strictly agricultural purposes?

Colonel WHIPPLE. That is correct.

Mr. RILEY. But in the surrounding territory you have a great many spots that have grown up within a reasonable distance of this proposed lake that would have a very great need for this power. Down in the valleys where there is the rich alluvial soil you have the farmers who are in need of power for their continued operation in the modern world. Is that right?

Colonel WHIPPLE. That is correct. The contiguous area, both in the area benefited by the flood protection and the area within which the power will be sold are some very thickly populated agricultural areas and also very rapidly growing industry, highly diversified and growing very fast.

COST OF PRODUCING POWER

Mr. RILEY. I believe you testified that the cost of producing power in this area from other than hydropower was about 6.9 mills.

Colonel WHIPPLE. That is the cost of producing power; yes, sir. That is on the basis of production of the power where it would most likely be produced, which would be near the load centers with an allowance for the difference of transmission cost between the Table Rock Dam and the steam plants that would be the alternative.

Mr. RILEY. If this project were constructed, then with a cost of production per kilowatt-hour of not more than 2 mills difference, and part of that was sold to the private power companies, it would help them bring down their average production cost, would it not?

Colonel WHIPPLE. We believe this power can be produced at a net cost of 2 mills less than they can produce it themselves.

Mr. RILEY. Would it not naturally follow if they can integrate this power with their own that they would have a lower cost basis and could, if they wanted to, make power available to the surrounding communities for a somewhat less rate?

Colonel WHIPPLE. Yes, sir.

Mr. RILEY. Now I may be getting in a realm of speculation a little bit, but it seems logical to me that the power companies could do better planning as to their own expansion if this Table Rock situation were out of the way either one way or the other.

Colonel WHIPPLE. That does not really interfere with it, sir.

Mr. RILEY. My thought is this, that as long as there is a possibility of this project being constructed by the Government, they are going to have trouble getting adequate financing; because they have to go out and justify the need for power in that territory and sell bonds before they can get any money to build. If this Table Rock project was out of the way, you would have a definite situation out there; they would know just exactly how much power the Government was going to produce and the power companies could plan their own future better than they can with this undetermined situation existing.

Colonel WHIPPLE. They would undoubtedly like to know whether the project is going to be built, or not, so that they can integrate their future plans around the presence or absence of the project.

Mr. RILEY. If I understand the project correctly, you have spent all together in planning and in construction in the neighborhood of $2.5 million?

Colonel WHIPPLE. Yes, sir.

Mr. RILEY. You still have available almost $2.5 million?

Colonel WHIPPLE. Yes, sir.

Mr. RILEY. How long will that amount last under a construction program, if it were released?

Colonel WHIPPLE. Of course construction would be initiated by the letting of this very large dam contract and the operations the first months would not require very large allocations of funds. It would probably carry the project, undoubtedly, for about the first 6 months.

Mr. RILEY. Would it be practicable to let contracts involving this $2.5 million that is available, without having funds to continue at the end of those contracts?

Colonel WHIPPLE. We would do that in any event; because the total contract is over $30 million. It will be a continuing contract.

Mr. RILEY. Suppose you did not have the money, would not there be an additional cost of construction if you had to spend this $2.5 million and then shut down?

Colonel WHIPPLE. Oh, yes, sir.

General CHORPENING. In all probability, going back to my earlier testimony, if we knew that all the funds we were going to have available on this construction between now and June 30, 1955, were the $2.5 million, then we would not award the contract until some time well along in fiscal 1955; because, otherwise, we would initiate a contract for which we did not have enough funds to properly prosecute.

Mr. RILEY. What would you do—hold this money in escrow, or go ahead and purchase some of the land and file and perfect your claims?

General CHORPENING. Probably it would be a little along that line, but we would keep enough so that we could at some time during fiscal 1955 enter a contract; whereas, should we secure additional funds that I discussed earlier, $3 million, then we could go ahead at a reasonably early date and advertise and award the contract and proceed through the fiscal year.

The other matter involved is if you advertise immediately with only a little bit of funds available, it would tend to increase the bids received and increase the cost to the Government accordingly.

Mr. RILEY. What are the working conditions generally in this area? Are you able to work for 12 months, or do you have to shut down for certain periods during the winter months?

General CHORPENING. We would expect to be interfered with, perhaps, on account of unfavorable winter weather, but it is to a relatively small extent. Working conditions are better here than in most parts of the country, because the winters are not very severe, and we can place concrete, if we need to, throughout the 12 months of the year.

Mr. RILEY. It could be made a year-round operation, then, if you had the funds?

General CHORPENING. Essentially so; it will be handled under the most economical schedule, but we will give the contractor the option of suspending his operations. However, it will be essentially a year-round operation.

Mr. RABAUT. In speaking about the limited amount of money in case you initiate the project, you say the cost will be more, and I presume you mean by that that the reason for the expectancy of the greater cost is that the contractor would not be certain that the project was going through to completion; is that right?

General CHORPENING. There are two things involved, Mr. Rabaut: The $2.3 million, if that is all that we can say is available between now and June 30, 1955, then we would be very reluctant to advertise for that work until a time in the year when the contractor coming on the job could proceed, and we would have funds available to him in the current year.

The second point is that when a contract of the size that we here contemplate, which would be, as I said, $30 million to $40 million, and still some question, maybe, about the project, the contractor with only that amount of money that he sees in the till would be reluctant. He would put a factor in there, or there would be a tendency for him to put a factor in to protect him against that.

BENEFIT OF THE PROJECT

Mr. RABAUT. That is what I surmised.

I believe you said the benefit-cost ratio on the power only was 1.3 to 1; is that correct?

Colonel WHIPPLE. That would be if you did build a project—not the one we are talking about now—but build a lower dam with no flood control, and operate it for power only.

If you did that, it would have a cost-benefit ratio of 1.3.

Mr. RABAUT. I believe you said the cost-benefit ratio, as best you could figure, for flood control, was .89 to 1?

Colonel WHIPPLE. That, again, would be the cost of a single-purpose flood control reservoir, at the same site, built without any provision for power.

Mr. RABAUT. Then, you said further that the flood control part of this project is related to the other projects down the river?

Colonel WHIPPLE. Yes, sir.

Mr. RABAUT. Do you have a cost to benefit ratio on the flood control of the related projects on the river, if this was to be just a flood control project?

Colonel WHIPPLE. The principal project downstream, or the project downstream that it is tied in with, is the Bull Shoals project, and I can get you that figure in a second.

Mr. RABAUT. I would like to see what this flood-control figure is.

Colonel WHIPPLE. In the case of the Bull Shoals Reservoir, sir, a single-purpose project for flood control only would be justified with a benefit-cost ratio of 1.54 to 1.

Mr. RABAUT. If this was added to that for the 2 projects, you would have to figure that out again to get this .89 to 1 benefit-cost ratio?

Colonel WHIPPLE. Yes, sir; but I can say if we were to consider no power whatsoever in either of these 2 reservoirs—the 2 reservoirs would then still be fully justified economically with a greater ratio than 1 to 1, as a system for flood control only.

They will stand on their own feet for flood control. However, if you were not putting the power in there, you would, of course, build them to lesser height, and operate them differently.

The advantage of the multiple purpose development is that the combined benefits are much greater than the costs of a single dam or flood control and for power, so that the benefit-cost ratio of multiple purpose development is higher. To put it another way, part of the cost of constructing this flood-control storage is shared by power and, on the other hand, part of the power cost is shared by flood control.

Mr. RABAUT. Yes; there is a relationship there. You are spending the money somewhat without the united benefits?

Colonel WHIPPLE. The multiplepurpose development is cheaper for power and for flood control because of the equitable sharing of the costs.

Mr. RABAUT. This committee is in an odd position in this whole project. The committee has had many witnesses before it not only last year, but in the year previous to that. It developed that almost everyone that came before us thought he was an engineer. So we decided to have a survey made. When we had the survey made and it was reviewed by us we would make known our findings.

At that time I thought I would go along with whatever the survey thought we should do. That is the position that the committee finds itself in.

What the decision will be remains to be seen from the members who sit at this table.

UNOBLIGATED BALANCES

Mr. DAVIS. The subcommittee will resume this afternoon with inquiry with respect to the various unobligated balances on a number of projects, and then proceed with the request for planning funds for fiscal year 1955.

We will insert into the record at this point a statement with respect to unobligated balances on the various projects.

(The matter referred to follows:)

Project	Unobligated balances		
	Actual, July 1, 1953	Actual, Dec. 31, 1953	Estimated, June 30, 1954
NAVIGATION PROJECTS			
CHANNELS AND HARBORS			
Alaska: Wrangell Narrows	$270,800		
Arkansas: Arkansas River and tributaries (bank stabilization) Arkansas and Oklahoma	544,010	$2,283,095	$3,300
California:			
San Diego River and Mission Bay	17,457	6,163	
Humboldt Harbor		29,016	
Florida:			
Canaveral Harbor, jetties	1,287	43,251	
Intracoastal Waterway, Jacksonville to Miami	63,914	4,637	
Jacksonville Harbor	100		
Georgia: Savannah Harbor	2,998	4,620	
Iowa:			
Missouri River:			
Omaha, Nebr., to Sioux City, Iowa	24,633	20,017	
Kansas City to Omaha, Nebr	200,014	443,043	
Kansas City to mouth	1—289,[illegible]	373,560	
Louisiana:			
Calcasieu River and Pass	465,309	456,177	450,000
Gulf Intracoastal Waterway between Apalachee Bay, Fla., and the Mexican border, Algiers Cutoff (New Orelans District)	2,256,243	2,087,364	675,000
Waterway from Empire, La., to the Gulf of Mexico	7	631	
Maine:			
Portland Harbor	90,000	90,000	90,000
Northeast Harbor		147,152	
Maryland: Baltimore Harbor	92,304	241,943	

See footnotes at end of table.

Project	Unobligated balances		
	Actual, July 1, 1953	Actual, Dec. 31, 1953	Estimated, June 30, 1954
NAVIGATION PROJECTS—Continued			
CHANNELS AND HARBORS—continued			
Massachusetts: Fall River Harbor	$915	$130,292	
New York:			
New York and New Jersey channels	203,768	853,268	
Buffalo Harbor	43,284	4,770	
New York Harbor	1,497		
Gowanus Creek Channel		343,630	
Ohio:			
Cleveland Harbor	197,816	337,149	$30,000
Ohio River open channel work (Hunt. District)	1,565		
Pennsylvania: Schuylkill River above Fairmont Dam	578,650	1,078,287	
Texas:			
Gulf Intracoastal Waterway between Apalachee Bay, Fla., and the Mexican border (Galveston District)	[1] 113,875	466,932	
Sabine Neches Waterway	7,584		
Houston Ship Channel	8,198		
Virginia:			
Norfolk Harbor, dredging, Belt Line Bridge	60,000	60,000	60,000
Norfolk Harbor, Craney Island disposal area		691,355	
Washington:			
Columbia River at Baker Bay	1,254	479	
Grays Harbor and Chehalis River	274,281	71,610	
West Virginia: Kanawha River	152		
Real estate and construction claims	3,000		
Total, channels and harbors	5,008,109	10,268,441	1,308,300
LOCKS, DAMS, AND CANALS			
Alabama: Demopolis lock and dam, part of Black Warrior, Warrior and Tombigbee River system	1,811,066	954,257	75,500
Illinois:			
Illinois Waterway, Lim. 0.009 (Nutwood Drainage District)	107,683		
Illinois Waterway	118,382	42,742	
Illinois Waterway, Lim. 0.016 (Calumet Sag)	26,570	26,570	
Mississippi River between the Missouri and Ohio Rivers Chain of Rocks	1,288,209	663,915	616,700
Mississippi River between the Missouri River and Minneapolis, Minn	175,449	101,016	
St. Anthony Falls, Minn	1,170,421	290,606	150,000
Keokuk, lock No. 19, Iowa	32	2,699,265	
Lock No. 2, Esplanade	57,300		
Lousiana: Pearl River lock and dam	211,088	64,226	
New York: Great Lakes to Hudson River Waterway	52,633	10,088	
Pennsylvania:			
Lock No. 2, Monongahela River, Pa., and W. Va	117,606	290,907	
Morgantown lock and dam, Monongahela River, Pa. and W. Va	426		
Total, locks and dams, and canals	5,137,765	5,143,592	842,200
FLOOD CONTROL PROJECTS			
LOCAL PROTECTION			
Arizona: Tucson diversion channel		1,012	
Arkansas:			
North Little Rock to Gillett above Plum Bayou		4,500	
Crawford County Levee District	189,332	115,208	
South bank of Arkansas River, head of Fourche Island to Pennington Bayou	13,677	7,408	
Pine Bluff	54,465	18,161	
California:			
Los Angeles County drainage area (exclusive of Whittier Narrows)	3,333	2,979,891	
Merced County stream group	457,511	740,114	135,500
Sacramento River and major and minor tributaries	124,771	97,983	
Sacramento River (levees, revetments, dredging) (old project)	2,067	3,214,896	
Colorado: Pueblo	434	371	
Connecticut:			
Hartford, CRB		14,868	
Norwich, TRB	370,856	370,856	370,856
Winsted, CRB	441		
Florida: Central and southern Florida	2,815,407	783,404	
Idaho: Snake River, Heise Roberts area	5,245	3,116	

See footnotes at end of table.

Project	Unobligated balances		
	Actual, July 1, 1953	Actual, Dec. 31, 1953	Estimated, June 30, 1954
FLOOD CONTROL PROJECTS—Continued			
LOCAL PROTECTION—continued			
Illinois:			
Columbia Drainage and Levee District No. 3	$442,997	$192,127	$100,000
Chouteau, Nameoki and Venice Drainage and Levee District	4,855	400	
Clear Creek Drainage and Levee District	98,387	92,987	54,000
Coal Creek Drainage and Levee District	4,542		
Degognia and Fountain Bluff Levee and Drainage District	−11,631	436,885	
East Cape Girardeau and Clear Creek Drainage and Levee District	761,265	580,940	349,265
East St. Louis and vicinity	772,667	705,405	
Fort Chartres and Ivy Landing Drainage District No. 5	261,288	129,039	
Grand Tower Drainage and Levee District	265,331	30,208	
Harrisonville and Ivy Landing Drainage and Levee District No. 2	681,647	193,733	
Lacey Langellier, West Matanzas and Kerton Valley drainage and levee district, Illinois Rive	45,305	806	
Miller Pond drainage and levee district	18,652	8,029	
Mounds and Mounds City, ORB	21,189	20,768	
North Alexander drainage and levee district	[1] −24,998	158,719	
Prairie du Rocher and vicinity	437,197	222,220	
Preston drainage and levee district	181,047	31,302	
Reevesville, ORB	2,073		
Rosiclare, ORB	10,893	4,865	
Stringtown, Fort Chartres, and Ivy Landing	189,323	59,965	
Wilson and Wenkel and Prairie du Pont drainage and levee district	127,009	217,093	
Wood River drainage and levee district	63,089	81,992	
Pekin and La Marsh drainage and levee district	9,515	4,405	
Indiana:			
Brevoort Levee, Wabash River	980		
New Albany	714,272	289,748	
Vincennes, ORB	[1] −432,530	499,586	102,000
Cannelton, ORB	15		
Jeffersonville-Clarksville	7,137	223	
Iowa: Council Bluffs, Missouri River Basin	45,768	−122	
Kansas:			
Hutchinson	250,360	486,836	359,911
Kansas cities on the Missouri and Kansas Rivers	6,448,594	3,621,270	1,248,594
Wichita and Valley Center	[1] −34,776	741,203	318,000
Kentucky:			
Ashland	89,176	30,594	
Covington	318,562	282,241	
Hawesville, ORB	13,385	4,605	
Louisville, ORB	3,584,592	1,924,002	1,028,691
Maysville, ORB	360,547	837,776	605,000
Newport, ORB	99,062	61,128	
Paducah, ORB	75,466	8,366	
Pineville, ORB	53,837	289,016	90,500
Russell, ORB	348		
Louisiana:			
Aloha-Rigolette Area, Grant and Rapides Parishes	195,701	132,192	
Bayou Teche and Vermilion River	52,977	323	
Mermentau River	[2] −35	1,754	
Natchitoches Parish (levees)	427,058	515,554	236,619
Red River below Denison Dam, levees and bank stabilization, Ark., Tex., and La. (New Orleans District)	10	451,284	
Lake Pontchartrain	784		
Maryland: Cumberland, Md. and Ridgely, W. Va	163,474	400,412	20,000
Massachusetts:			
Adams, Hoosic River Basin	53,586	43,454	
North Adams, Hoosic River Basin	19,778	12,255	
Chicopee, ORB	4,530	3,112	
West Springfield, ORB	19,724	15,550	
Michigan:			
Red Run, Clinton River	7,209	6,396	
Mount Clemens, Clinton River	6,988		
Minnesota:			
Red River of the North, Minn., N. Dak. and S. Dak.			49,600
Including Red Lake and Clearwater River	389,489	730,067	
Mississippi River near Aitkin, Minn	302,951	235,708	7,900
Missouri:			
Charlton River	66,588	59,919	
Missouri River agricultural levees	1,664,287	1,402,491	1,006,800
Perry County drainage and levee districts Nos. 1, 2, and 3	510,745	270,879	
Montana: Havre	297,995	58,816	

See footnotes at end of table

Project	Unobligated balances		
	Actual, July 1, 1953	Actual, Dec. 31, 1953	Estimated, June 30, 1954
FLOOD CONTROL PROJECTS—Continued			
LOCAL PROTECTION—continued			
Nebraska:			
Missouri River Kenslers Bend, Nebr. to Sioux City, Iowa	$15,696	$33,028	
Omaha, Missouri River Basin	4,020	3,618	
New York:			
Corning (Monkey Run)	618,396	337,844	
Hoosic Falls, Hoosic River Basin	12,192	10,045	
Lancaster, Cayuga Creek	5,379	892	
Montour Falls, ORB	6,633	463	
Olean, ORB	2,835	840	
Portville, ORB	76	76	
Southern New York projects (Binghamton area)	10,981	6,768	
Syracuse, Oswego River Basin	4,285	1,978	
New Mexico: Rio Grande Floodway	208,226	419,627	
North Dakota: Mandan, Heart River	71,556	71,566	$71,566
Ohio:			
Cincinnati, ORB	13,499	4,414	
Massillon, ORB	9,844	7,039	
Portsmouth-New Boston, ORB	3,161	2,374	
Oklahoma:			
Oklahoma City Floodway	19,170	898,226	214,000
Tulsa-West Tulsa	2,429	914	
Oregon:			
Amazon Creek	[1] −12,603	16,052	
Milton Freewater	3,910	3,910	
Willamette River Basin (bank protection)	13,345	61,819	
Pennsylvania:			
Kingston-Edwardsville	472		
Plymouth, Susquehanna River	157		
Punxsutawney	11,793		
Sunbury, Susquehanna River	1,603		
Swoyersville and Forty Fort	150,082	435,619	
Wilkes-Barre, Hanover Township	18		
Williamsport, Susquehanna River	384,366	1,045,358	
York	168	82	
Tennessee: Memphis, Wolf River and Nonconnah Creek	661,690	982,176	461,690
Texas:			
Dallas Floodway, TRB	303,430	540,861	
Fort Worth Floodway	81,651	783,748	
Washington: Tacoma, Puyallup River		1,225	
West Virginia:			
Huntington Floodwall, sec. 2, ORB	23	23	
Parkersburg, ORB	730		
Point Pleasant, ORB	903		
Real estate and construction claims	468,874		
Total local protection	27,346,815	30,580,899	6,920,492
DAM AND RESERVOIRS			
California:			
Big Dry Creek Reservoir and diversion channel	21,295	15,736	
Tuolumne River Reservoir (Cherry Valley)	19,821	13,383	
Farmington Reservoir	280,663	284,398	
Isabella Reservoir, Kern River	417,104	217,287	
Pine Flat Reservoir, Kings River	1,018,291	1,614,646	1,253,455
San Antonio Reservoir	345,305	1,545,294	
Whittier Narrows Reservoir	383,830	4,488,270	
Prado Dam	3		
Colorado: Cherry Creek Dam and Reservoir	554	740	
Connecticut: Mansfield Hollow Reservoir, TRB	283,322	116,552	
Idaho: Lucky Peak Reservoir	1,570,347	1,253,143	303,200
Illinois: Farm Creek Reservoir	417,856	370,666	275,147
Indiana: Cagles Mill Reservoir, ORB	23,102	17,639	
Iowa: Coralville Reservoir	422,849	426,232	376,500
Kansas:			
Fall River Reservoir, ARB		307	
Kanopolis Reservoir, MRB	228,701	124,491	66,101
Tuttle Creek Reservoir	1,214,571	230,982	
Kentucky: Dewey Reservoir, ORB	50,747	19,152	
Louisiana:			
Bayou Bodcau Reservoir	37,333	32	
Wallace Lake Reservoir	1,894	405	
Maryland: Savage River Reservoir	9,663	6,446	
Massachusetts:			
Birch Hill Reservoir, CRB	3,197	175	
Knightsville Reservoir, CRB	8,955	5,311	
Tully Reservoir, CRB	83	924	

See footnotes at end of table.

Project	Unobligated balances		
	Actual, July 1, 1953	Actual, Dec. 31, 1953	Estimated, June 30, 1954
FLOOD CONTROL PROJECTS—Continued			
DAM AND RESERVOIRS—continued			
Minnesota: Lac Qui Parle Reservoir	$37,380	$25,477	
Missouri: Clearwater Reservoir, MRB	357,577	328,476	$298,133
Nebraska: Harlan County Reservoir, MRB	713,207	670,963	462,407
New Hampshire:			
Blackwater Reservoir	271	271	
Edward MacDowell Dam, MRB	5	29,984	
Franklin Falls Reservoir, MRB	250	14	
New Mexico:			
Jemez Canyon Dam and Reservoir	248,197	106,583	
John Martin Reservoir		1,757	
New York: Mount Morris Reservoir	105,046	59,496	
North Dakota:			
Homme Reservoir	33,690	1,870	
Baldhill Dam and Lake Ashtabula, Sheyene River	28,606	26,663	
Ohio:			
Tom Jenkins Reservoir, ORB	1,815	7,887	
Dillon Reservoir, ORB	49,230	38,810	
Delaware Reservoir, ORB	18,636	4,127	
Muskingum River Reservoir	87,527	75,172	
West Fork of Hill Creek Reservoir	75,908	47,247	
Oklahoma:			
Canton Reservoir, ARB	3,415	777	
Hulah Reservoir, ARB, Oklahoma and Kansas	12,626	5,503	
Polecat Creek (Heyburn)	507		
Wister Reservoir, ARB	19,913	115	
Oregon: Dorena Reservoir	2,439		
Pennsylvania:			
Conemaugh River Reservoir	868,801	572,946	163,522
East Branch Clarion River Reservoir, ORB	92,784	59,385	14,232
South Dakota: Fall River Basin	178,492	178,075	96,665
Texas:			
Belton Reservoir	901,233	1,185,421	572,600
Benbrook Reservoir	154,305	136,782	
Garza-Little Elm Reservoir	[2] −51,682	983,739	
Grapevine Reservoir, TRB	426,787	310,736	
Hords Creek Reservoir	106	143	
Lavon Reservoir, TRB	472,282	396,385	
San Angelo Reservoir and Floodway	126,331	91,628	
Texarkana Reservoir	[1] −2,641,567	6,146,107	
Buffalo Bayou	66,011	775	
Vermont: Union Village Reservoir, CRB	44,420	14,083	
Washington: Mud Mountain Dam, White River	9,879		
West Virginia:			
Sutton Reservoir, ORB	114,116	84,410	
Bluestone Reservoir, ORB	54,457	25,442	
Real estate and construction claims	398,200		
Total dams and reservoirs	9,770,680	22,369,460	3,881,962
MULTIPLE-PURPOSE PROJECTS INCLUDING POWER			
Arkansas:			
Blakely Mountain Reservoir	1,059,010	4,382,413	1,267,700
Bull Shoals Reservoir, Arkansas and Missouri	34,332	1,684,164	957,200
Narrows Reservoir	9,937	991	
Norfolk Reservoir, WRB	595,786	537,114	381,447
California: Folsom Reservoir	[1] −511,559	1,552,682	
Florida: Jim Woodruff lock and dam, Florida and Georgia, Part of Apalachicola, Chattachoochee, and Flint Rivers system, Alabama, Florida, and Georgia	391,125	2,498,647	210,300
Georgia:			
Allatoona Reservoir, Coosa River Basin	178,913	151,675	79,978
Buford Dam, Apalachicola, Chattachoochee, and Flint Rivers system, Alabama, Florida, and Georgia	[1] −228,039	4,549,025	
Clark Hill Reservoir, Georgia and South Carolina	141,750	220,676	
Idaho: Albeni Falls Dam		1,236,676	140,000
Kentucky: Wolf Creek Reservoir, ORB	500,752	320,275	74,871
Michigan: St. Marys River	74,815	42,147	
Missouri: Table Rock Reservoir, Missouri and Arkansas	1,726,581	2,565,736	2,349,546
Montana: Missouri River at Fort Peck	293,618	252,865	
Nebraska: Gavins Point Reservoir, Nebraska and South Dakota	3,020	2,942,263	

See footnotes at end of table.

Project	Unobligated balances		
	Actual, July 1, 1953	Actual, Dec. 31, 1953	Estimated, June 30, 1954
MULTIPLE-PURPOSE PROJECTS INCLUDING POWER—Con.			
North Carolina: John H. Kerr Reservoir, Va. and N. C	$1,449,638	$2,584,447	$985,300
North Dakota: Garrison Reservoir, MRB	1,648,741	6,621,060	1,008,600
Oklahoma:			
Denison Reservoir, Red River, Tex. and Okla	33,160	19,569	
Fort Gibson Reservoir, ARB	524,170	336,858	155,100
Tenkiller Ferry Reservoir	[1] −5,803	331,555	116,630
Oologah Reservoir, ARB	79,190		
Oregon:			
Detroit Reservoir	3,278,677	1,937,526	772,036
McNary Lock and Dam, Oregon and Washington	[1] −1,802,994	2,387,397	
Lookout Point Reservoir	153,899	3,716,237	3,111,400
The Dalles Dam, Columbia River	3,622,700	9,020,745	6,123,900
Columbia River at Bonneville	976		
Restoration of fishing grounds at Bonneville (Lim. 0.011)	21,193	19,864	10,512
South Dakota:			
Fort Randall Reservoir, Missouri River Basin	18,668	1,809,980	
Oahe Reservoir, Missouri River Basin	567,463	2,355,280	
Tennessee:			
Center Hill Reservoir, ORB	342,051	112,893	
Cheatham lock and dam, part of Cumberland River system, Kentucky and Tennessee	754,108	705,876	
Dale Hollow Reservoir, ORB, Tenn. & Ky	374,504	144,575	32,000
Old Hickory lock and dam, part of Cumberland River system, Kentucky and Tennessee	[1] −1,253,994	1,838,903	
Texas:			
Dam B, Neches-Angelina Rivers	198,168	232,398	42,000
Whitney Reservoir, BRB	730,999	463,687	129,410
Virginia: Philpott Reservoir	215,639	143,875	
Washington: Chief Joseph Dam, Columbia River	1,089,467	1,951,822	
Real estate and construction claims	595,230		
Total, multiple purpose projects including power	16,905,900	59,671,896	17,947,930
Grand total	64,169,269	128,034,288	30,900,884

[1] In the course of any one fiscal year loans are made between projects already under construction to permit most effective use of funds on projects approved by Congress. These loans are returned to source upon availability of the next year appropriations. Negative amounts as used in this tabulation result from adjustments of these loans applied to unobligated balances and are not an indication that total allotments to the project are overobligated.

[2] Negative amount results from changing accounting methods from cash to accrual basis on July 1, 1953.

[3] Includes $13,500,000 fiscal year 1953 funds reserved by B. O. B.

(See p. 500 for funds loaned and borrowed, 1954.)

Mr. DAVIS. A perusal of this list indicates there are some of these projects which require an explanation for the record.

Generally, what are the factors involved in the unobligated balances that do appear on a great many of these projects in cases where no construction funds are requested in the 1955 fiscal year?

Colonel POWERS. Mr. Chairman, there are a number of reasons for carrying over an unobligated balance on a project for which completion funds have already been appropriated.

In some cases, real-estate matters are still involved in condemnation proceedings in court, and have not yet been settled; in some cases litigation is going on with respect to claims on contracts, and a certain amount of money remains in the appropriation to cover those amounts which probably will be required. In addition, there are a number of road, and railroad relocations, and items for deferred maintenance work on constructed fills for railroads and roads, which are required to be carried out over a year or 2 years, or sometimes even 3 years after completion of the actual project.

CALCASIEU RIVER AND PASS, LA.

Mr. DAVIS. The first of the projects with an unobligated balance that appears to require explanation is the Calcasieu River Pass in Louisiana, where you have an estimated unobligated balance of $450,000 on June 30.

What is the explanation for that?

Colonel POWERS. The $450,000 is actually a balance remaining from funds providing for the new construction which is now complete. That money would have reverted to surplus this year, except that a requirement has arisen for work on two of the major bends in the river due to the increased size of the tankers and the length of the tankers used in the river, and it has been necessary to plan for the easement of those two bends, requiring an acquisition of land.

Ordinarily, such work would be carried on during the maintenance and operation of the project, and would be so in this case, except for the limited amount of funds which are available for operation and maintenance of rivers and harbors.

It is considered that it is proper to use this money for that purpose. It is expected that the plans will be complete and the work will be advertised and contracted for early this summer. It is, approximately, in the amount of $450,000.

Mr. DAVIS. That unobligated balance, then, will complete the planning and the work that will be required there; will it not?

Colonel POWERS. Yes, sir.

GULF INTRACOASTAL WATERWAY BETWEEN APALACHEE BAY, FLA., AND THE MEXICAN BORDER, ALGIERS CUTOFF

Mr. DAVIS. The next item where there is an unobligated balance requiring an explanation is on the Gulf Intracoastal Waterway between Apalachee Bay, Fla., and the Mexican border, in the Algiers Cutoff, where an item of $675,000 appears.

Will you tell us about that, Colonel Powers?

Colonel POWERS. In connection with that cutoff above the Algiers lock considerable difficulties have been in the way of proceeding with railroad and highway grade relocations, and this amount of $675,000 is required to proceed in 1955.

Mr. DAVIS. That is held over, then, by reason of delays, and this unobligated balance will do the job during 1955 fiscal year, and complete the project?

Colonel POWERS. It will not complete the project, sir. There will be additional amounts required in 1957 and 1958. The requirements of local interests for highway crossing over the canal are still under consideration.

MISSISSIPPI RIVER BETWEEN THE MISSOURI AND OHIO RIVERS CHAIN OF ROCKS, ILL.

Mr. DAVIS. On the Mississippi River between the Missouri and Ohio Rivers in the Chain of Rocks area, there appears an unobligated balance of $616,700 estimated as of June 30 of this year.

What is the explanation of that?

Colonel POWERS. At the mouth of the entrance to the Chain of Rocks Canal we have had considerably difficulty with recurring shoaling, and the completion of the project requires the construction of diversion dikes at that entrance to channel the water so that the shoal will not be created.

The work will be undertaken this year with funds now available, but will require some part of this balance to complete.

In addition, there are several claims amounting to about $450,000, in connection with lock walls which have just been constructed. A part of this money is for that purpose. No additional funds are expected to be requested.

NORWICH, CONN.

Mr. DAVIS. At Norwich, Conn., there appears an estimated unobligated balance of $370,856, which has been constant for some period of time, evidently.

Can you tell us the reason for that?

Colonel POWERS. Yes, sir. That sum of money was set aside for completion of certain channel improvement, and a part of the project cannot be completed until the State builds a new bridge.

The State is currently constructing that bridge, and it is expected that the money will be obligated and the work completed in fiscal year 1955.

Mr. DAVIS. And that amount of money will take care of that work; will it not?

Colonel POWERS. Yes, sir.

EAST CAPE GIRARDEAU AND CLEAR CREEK DRAINAGE AND LEVEE DISTRICT, ILL.

Mr. DAVIS. The East Cape, Girardeau, and Clear Creek Drainage and Levee District appears to have an unobligated balance of $349,265 estimated as of June 30.

Does that represent the delay in the work there?

Colonel POWERS. No, sir; that represents the funds required to complete current work on the corrective action concerning the banks of borrow pits, and certain control measures concerning seepage under the levees which are currently being studied.

It is believed that the funds here are sufficient to do the work.

General CHORPENING. That ties back to our earlier testimony on these hearings on the seepage work and borrow pit corrective work on the whole group of rivers in that area.

Mr. DAVIS. My recollection is that there were no funds requested for the East Cape-Girardeau project, but there were funds requested for Clear Creek drainage in that district; is that correct?

General CHORPENING. That is correct.

Mr. DAVIS. Funds were requested for the Clear Creek Drainage District for 1955?

General CHORPENING. That is correct.

HUTCHINSON, KANS.

Mr. DAVIS. At Hutchinson, Kans., there appears an estimated unobligated balance of $359,911 as of June 30.

Colonel Powers, will you tell us about that?

Colonel POWERS. Yes, sir.

Additional work on the levee and the channel is required to be accomplished in 1955, and those funds are for that purpose, as well as to complete our contracts for the relocation of the railroad.

Mr. DAVIS. That completes the project; does it not?

Colonel POWERS. Yes, sir.

Mr. DAVIS. Did you have a little more difficult negotiation with the railroads than you had anticipated?

Colonel POWERS. I am not certain, sir.

General CHORPENING. We received completion funds in this current year. So, I do not think that is too unusual to be winding up with that amount since this was the completion year.

KANSAS CITIES ON THE MISSOURI AND KANSAS RIVERS, KANS.

Mr. DAVIS. In the Kansas Cities on the Missouri and Kansas Rivers there appears an unobligated amount estimated as of June 30 to be $1,248,594.

Will you tell us the basis of that?

Colonel POWERS. The major portion of that unobligated balance is occasioned by a slowdown on the lower Armourdale unit. That slowdown occurred because of a desire to change the design and because of a question of whether or not the local cooperation would conform to the requirements of the Government.

It is expected that that will be obligated during 1955.

Mr. DAVIS. This amount will carry the project along during that fiscal year?

Colonel POWERS. Yes, sir.

LOUISVILLE, KY.

Mr. DAVIS. At Louisville, Ky., there appears an unobligated balance which is estimated to be $1,028,691, as of June 30.

Is that due to a delay in that project?

Colonel POWERS. Those funds are left unobligated because of the slowdown in providing the Bear Grass pumping plant. The plant was not required at this time, and it was deemed an appropriate place to slow down.

Mr. DAVIS. If I recall correctly, it was because of rather large unobligated balances that no appropriation was made for the current fiscal year on this project; is that correct?

General CHORPENING. We received an appropriation for the current fiscal year, sir, of, I think, $400,000.

Mr. DAVIS. This committee recommended no funds, as I recall, and then there was some money placed in the final conference report.

General CHORPENING. This committee allowed no funds, and we indicated that we thought we could get along without any, but we did have some money given to us.

I am in error on that. We did not receive any funds. I thought we were given some. It was another project that I had in mind.

Mr. DAVIS. You anticipate that this amount of over $1 million will be obligated during the 1955 fiscal year, or not?

Colonel POWERS. Yes, sir.

Mr. DAVIS. You do anticipate that?

Colonel POWERS. Yes, sir.

Mr. DAVIS. It was the existence of this balance and the previous slowdown there that explains the fact that there is no request pending before the committee for the 1955 fiscal year?

General CHORPENING. That is correct, sir.

NATCHITOCHES PARISH (LEVEES), LA.

Mr. DAVIS. At the Natchitoches project in Louisiana we have an estimated unobligated balance of $236,619 as of June 30.

Colonel Powers, will you give us an explanation of that?

Colonel POWERS. That is continuing additional costs and minor supplements to existing contracts.

Mr. DAVIS. Does that complete that project?

Colonel POWERS. Yes, sir; it does.

MEMPHIS, WOLF RIVER, AND NONCONNAH CREEK, TENN.

Mr. DAVIS. At Memphis on the Wolf River, and the Nonconnah Creek there appears an unobligated balance estimated to be $461,690 on June 30.

What is the status of that?

Colonel POWERS. Those funds are programed for obligation on sections 1 (b) and 1 (c) of the flood wall on that project.

Mr. DAVIS. Will that amount complete this project?

Colonel POWERS. I do not believe that it will, sir.

Mr. DAVIS. But it does permit the continuation of the work during the 1955 fiscal year; is that right?

Colonel POWERS. Yes, sir; it does.

General CHORPENING. No funds are being requested for that in this current fiscal year.

Mr. DAVIS. Have you been slowed down as a result of the failure of local interests to provide the necessary rights of way, and things of that kind?

Colonel STARBIRD. Yes, sir; at at least two locations they have asked us to defer the work at least temporarily because they wanted to provide the rights of way. At the present time, as has already been mentioned, the plan is to obligate that amount in fiscal 1955.

PINE FLAT RESERVOIR, KINGS RIVER, CALIF.

Mr. DAVIS. On the Pine Flat Reservoir in California there appears an unobligated balance estimated to be $1,253,455 on June 30.

Colonel, will you give us an explanation of that?

Colonel POWERS. In connection with that project there is a considerable amount of work in excess of $1 million still to be done on the channel downstream from the Pine Flat Reservoir.

It is expected that those funds will be obligated in fiscal year 1955.

General CHORPENING. We have received completion funds on that project. I think we received those in this current fiscal year.

Mr. DAVIS. This amount, when the work is put in place, does complete that project?

General CHORPENING. That is correct, sir.

FARM CREEK RESERVOIR, ILL.

Mr. DAVIS. At the Farm Creek Reservoir in Illinois, there appears an unobligated balance of $275,147 estimated as of June 30, 1954.

Colonel Powers, will you please give the committee an explanation of that?

Colonel POWERS. No further appropriation is required. Those funds are mainly required for Government costs, and the completion of a railroad relocation contract. However, the railroad relocation contract will be delayed for a considerable length of time and it may not be completed until the summer of 1956.

Mr. DAVIS. Is that the reason for the delay in this work?

That is, has the delay been occasioned as a result of the relocation problem?

Colonel POWERS. Yes, sir.

Mr. DAVIS. What is the bone of contention there which causes the delay?

Colonel POWERS. I cannot answer that, sir.

General CHORPENING. Do you have any idea about that, Colonel Starbird?

Colonel STARBIRD. No, sir.

General CHORPENING. We can supply that for the record, sir. I am sorry I do not have the detailed information with me.

(The matter referred to follows:)

Relocation work is being accomplished by the Toledo, Peoria & Western Railroad under a contractual agreement with the Government. The work has been scheduled over a long period to conform with the operational requirements of the railroad.

CLEARWATER RESERVOIR, MO.

Mr. DAVIS. At the Clearwater Reservoir in Missouri, there appears an item of unobligated balance of $298,133 estimated as of June 30.

Will you please tell us about that, Colonel?

Colonel POWERS. The major portion of that is for the completion of payments on hand and acquisition of lands in the amount of $210,000. In addition, there is about $30,000 for road relocations and $14,000 for cemetery relocation, and we believe there are adequate funds to complete the project.

HARLAN COUNTY RESERVOIR, NEBR.

Mr. DAVIS. With respect to Harlan County Reservoir in Nebraska, there appears to be $462,407 estimated as an unobligated balance on June 30, 1954.

Will you give us an explanation of that?

Colonel POWERS. Also, in this case, there is $138,000 still to be paid on lands and damages. About $65,000 is the cost of additional relocation, and about $55,000 in the reservoir and pool and $41,000 for railroads.

There are also additional funds set aside and programed at the present time for recreational facilities and for buildings and grounds for the operation of the project.

General CHORPENING. I do not think we contemplate spending any of this unobligated balance for those recreational facilities that we here mentioned. I would like to look into that, because I do not think we have authorized those to proceed at this time.

Mr. DAVIS. Those facilities involve the remaining funds for this project, then, and that is the end of it?

General CHORPENING. That is correct, and we have had completion money for this project.

Mr. DAVIS. You will furnish a statement with respect to those recreational facilities?

General CHORPENING. Yes, sir; I am sure we do not expect to spend that amount of funds for the recreational facilities and I will perfect the record in that regard.

(The information requested is as follows:)

Funds programed for expenditure for fiscal year 1955 at Harlan County previously reported as being for recreational facilities are programed for the development of minimum required public access at points selected on the basis of public demand not previously defined.

BULL SHOALS RESERVOIR, ARK. AND MO.

Mr. DAVIS. At the Bull Shoals Reservoir there appears an item of $957,200 estimated to be unobligated as of June 30.

Will you tell us the reason for that?

Colonel POWERS. There is an additional $500,000, approximately, still to be obligated on the dam proper and $68,000 on roads, railroads and bridges.

Also additional funds for buildings and grounds, and permanent operating equipment.

General CHORPENING. This, too, is the completion here for Bull Shoals. As I recall it, we received our completion money in the current fiscal year.

NORFORK RESERVOIR, ARK.

Mr. DAVIS. At the Norfork Reservoir in Arkansas there appears an amount of $381,447 estimated as of June 30 of this year.

What is the explanation of that?

General CHORPENING. These are to complete programed work in the switchyard, and on minor relocations. That will complete the project.

JOHN H. KERR RESERVOIR, VA. AND N. C.

Mr. DAVIS. At the John H. Kerr Reservoir, there appears to be $985,300 which will remain unobligated as of June 30.

Colonel POWERS. A major portion of that—about $450,000—is for final payments on lands and damages in cases that are in court. There are additional funds there for the completion of housing and grounds for the operators' facilities.

General CHORPENING. We received completion funds for that project too in this fiscal year.

Mr. DAVIS. No additional funds are required, then, for this project?

General CHORPENING. No, sir.

I think I had better perfect my answer there a little bit. On most of these projects where we now have asked for completion funds, we show in a deferred status certain funds for recreational development at some time in the future. Under the present policy we are not proposing at this time actually, unless there is a change in the overall instructions which we are given, such work.

If and when, however, there should be a change there would be funds required for those purposes.

With that proviso, then, we do have completion funds now.

DETROIT RESERVOIR, OREG.

Mr. DAVIS. At the Detroit Reservoir in Oregon there appears to be $772,036 which will remain unobligated as of June 30.

Will you please tell us the basis of that?

Colonel POWERS. There is a considerable amount of work amounting to probably $1.5 million which will be programed in the latter part of the current fiscal year and into fiscal year 1955, and possibly stretching into fiscal year 1956, and approximately $772,000 is expected to be left for that work after June 30, 1954. That work includes about $700,000 on the dam; about $331,000 for a fish collection station and hatchery operation, and $68,000 for a powerhouse and switchyard; about $175,000 for buildings and grounds.

FUNDS LOANED AND BORROWED, 1954

Mr. DAVIS. Will you separately show those projects which have been the beneficiaries of loans within the corps and those from which loans have been made?

General CHORPENING. Yes, sir.

(The information requested follows:)

Construction, general—Funds loaned and borrowed in fiscal year 1954

Funds loaned to projects:	
Illinois Waterway, Ill	$189,000
North Adams, Mass	32,000
Adams, Mass	20,000
Clear Creek, Drainage and Levee District, Ill	156,000
Degognia and Fountain Bluff, Drainage and Levee District, Ill	166,500
Grand Towers, Drainage and Levee District, Ill	175,300
Belton Reservoir, Tex	101,900
Old Hickory Lock and Dam, Tenn	1,264,820
Folsom Dam, Calif	1,500,000
Clark Hill Dam, Ga. and S. C	1,176,200
McNary Dam, Oreg. and Wash	2,500,000
Los Angeles County Drainage Area, Calif	706,000
Total	7,987,720

Construction, general—Funds loaned and borrowed in fiscal year 1954—Con.

Funds borrowed from projects:	
Wilson and Wenkel and Prairie du Pont, Ill	50,000
Columbia Drainage and Levee District, No. 3, Ill	116,500
North Alexander Drainage and Levee District, Ill	145,300
Garza-Little Elm, Tex	958,000
Kansas Cities, Kan. and Mo	2,000,000
Missouri River Agricultural Levees	500,000
Oahe Dam, S. Dak	500,000
Gulf Intracoastal Waterway	675,000
Buford Dam, Ga	1,010,000
Natchitoches Parish, La	100,000
Maysville, Ky	605,000
Pine Flat, Calif	877,000
Texarkana Reservoir, Tex	1,000,000
Blakely Mountain Reservoir, Ark	500,000
East St. Louis and vicinity	30,000
Whittier Narrows, Calif	706,000
Total	9,772,800
Reserve for contemplated loans	1,785,080
Contemplated loans to projects:	
Folsom	1,832,000
Old Hickory	1,000,000
Total	2,832,000
Source of funds for contemplated loans:	
Whittier Narrows	1,000,000
San Antonio	46,920
Reserve (above)	1,785,080
Total	2,832,000

Advance Engineering and Design

Mr. Davis. We will insert in the record at this point pages 33, 34, 35 and 36 of the justifications, which lists the recommended projects for advance engineering and design.

(The matter referred to follows:)

Advance engineering and design	Total estimated Federal cost	Allotments prior to fiscal year 1955	Tentative allocation fiscal year 1955	Additional to complete after fiscal year 1955
NAVIGATION PROJECTS				
Alabama: Jackson lock and dam	$28,546,000	$33,600	$55,000	$28,457,400
California: Redondo Beach Harbor	4,368,000	0	50,000	4,318,000
Hawaii: Kawaihae Harbor	6,679,100	0	50,000	6,629,100
Illinois: Illinois Waterway, Calumet-Sag Channel	126,343,000	[1] 1,294,600	40,000	124,008,400
Indiana: Markland locks and dam, Indiana, Kentucky, and Ohio	77,112,000	379,500	50,000	76,682,500
Kentucky: Greenup lock and dam, Kentucky and Ohio	64,980,000	370,800	50,000	64,559,200
Louisiana: Plaquemine, Morgan City alternate route	24,350,000	201,500	80,000	24,068,500
West Virginia: Hildebrand lock and dam	13,912,000	117,000	40,000	13,755,000
Total, navigation	346,290,100	2,397,000	415,000	343,478,100
FLOOD CONTROL PROJECTS				
Arizona: Painted Rock Reservoir	34,933,000	304,000	100,000	34,529,000
California:				
Russian River Reservoir	15,250,200	326,000	150,000	14,774,200
San Antonio and Chino Creeks	11,941,000	150,000	80,000	11,711,000
San Joaquin River and tributaries	5,598,000	351,200	40,000	5,206,800
Colorado: Chatfield Reservoir	31,350,000	0	50,000	31,300,000
Connecticut: Hartford (Folly Brook section)	292,900	0	25,000	267,900
Idaho: Columbia River local protection, Idaho, Oreg., Wash., Wyo., Utah, Nev., and Mont	15,000,000	60,000	75,000	14,865,000
Illinois:				
South Beloit, Rock River	117,100	0	10,000	107,100
Sny Basin	18,960,000	518,700	60,000	18,381,300
Indiana:				
Greenfield Bayou Levee	1,118,000	0	20,000	1,098,000
Mansfield Reservoir	5,366,000	45,500	70,000	5,250,500
Kentucky:				
Buckhorn Reservoir	6,618,000	0	40,000	6,578,000
Jackson	230,000	1,900	12,000	216,100
Massachusetts: Buffumville Reservoir	2,566,000	114,700	25,000	2,426,300
Missouri: Pomme de Terre Reservoir	22,446,000	529,500	15,000	21,901,500
Montana: Billings	3,665,600	0	25,000	3,640,600
Nevada: Mathews Canyon Reservoir	755,000	0	40,000	715,000
New Mexico: Chamita Reservoir	26,315,000	455,000	175,000	25,685,000
New York:				
Allegheny River Reservoir, Pa. and N. Y.	87,260,000	116,500	50,000	87,093,500
Davenport Center Reservoir	11,045,000	284,400	50,000	10,710,600
Wellsville	918,000	38,000	26,000	854,000
Oregon: Pendleton	607,000	0	15,000	592,000
Pennsylvania: Bradford	8,492,000	64,000	80,000	8,348,000
Rhode Island: Woonsocket	1,826,000	0	30,000	1,796,000
Utah: Spanish Fork River	219,000	0	16,000	203,000
Washington:				
Colfax	2,361,000	73,900	25,000	2,262,100
Eagle Gorge Reservoir	19,855,300	310,200	170,000	19,384,100
Wyoming:				
Greybull	714,000	0	40,000	674,000
Jackson Hole	1,915,000	0	50,000	1,865,000
Total, flood control	337,734,100	3,734,500	1,564,000	332,435,600
MULTIPLE PURPOSE PROJECTS				
Alabama: Fort Gaines lock and dam	82,793,000	532,100	20,000	82,240,900
Georgia: Hartwell Reservoir, Ga. and S. C.	90,637,000	815,600	50,000	89,771,400
Montana:				
Fort Peck Dam, 2d powerplant	23,301,500	175,000	220,000	22,906,500
Libby Reservoir	263,321,000	520,500	46,000	262,754,500
Oregon: Hills Creek Reservoir	32,261,000	420,000	125,000	31,716,000
Tennessee: Carthage Dam	43,073,000	280,000	40,000	42,753,000
Washington: Ice Harbor lock and dam	135,930,000	1,082,200	20,000	134,827,800
Total, multiple purpose	671,316,500	3,825,400	521,000	666,970,100
Grand total, advance engineering and design	1,355,340,700	9,956,900	2,500,000	1,342,883,800

[1] Includes $300,000 for emergency construction work.

Mr. DAVIS. By way of summary, there appears to be 8 navigation projects, with a total request for planning funds in the amount of $415,000; 29 flood-control projects with a total requested planning fund of $1,564,000, 7 multipurpose projects with a total requested planning fund of $521,000.

Before we proceed with the discussion of the specific planning projects, would you tell us the status of your overall planning program at this time?

General CHORPENING. It will be recalled that the appropriation for the current fiscal year for planning was $1.9 million, allocated to 35 projects, nationwide.

During the year we have proceeded with that planning as rapidly as those funds and other circumstances would permit. Some—I do not recall the exact number of those projects for which planning funds were requested in the current fiscal year—we have presented for construction funds in 1955.

I will insert the exact number into the record, which I think is of value here.

Five projects, to which advance engineering and design funds were allocated from the fiscal year 1954 appropriation, are in the fiscal year 1955 budget for construction.

General CHORPENING. We have brought the other projects on which we are now spending planning funds closer to the point where they would be in a position to go into construction should that be desired. Some of those projects we are presenting in this budget request, since we would like to pursue their planning further.

I think it is of interest to note that of the navigation projects—out of the 81 presented—the funds being requested will put all of them to the point where they could go into construction with the exception of 2; these are the Jackson lock and dam and the Markland lock and dam. As for the other 6, if the funds herein requested are allowed, we would be in a position to go into construction.

UNOBLIGATED AND UNEXPENDED BALANCES

Mr. DAVIS. Do you have with you today, General, the information as to the status of the remaining funds with respect to unobligated and unexpended balances, and that includes an estimate of your unobligated and unexpended balances as of the end of this fiscal year?

General CHORPENING. As of the 31st of December, 1953, the unobligated balance was $2,095,905, and the unexpended balance was $2,284,245. In the 6 months remaining of the fiscal year, we will, of course, make very decided inroads in those unobligated and unexpended balances. As you can appreciate, the great bulk of this work is done by our own forces. That is why, in this instance, the unobligated and the unexpended balances are very nearly the same.

Mr. DAVIS. Is it too early in the fiscal year to present us with an accurate estimate as to your unobligated and unexpended balances as of June 30, 1954?

General CHORPENING. We can give you our best judgment at this time, and we will furnish it for the record.

(The information requested follows:)

The estimated unobligated balance on June 30, 1954, is $300,000 and the estimated unexpended balance $400,000 for advance engineering and design.

Mr. DAVIS. I believe you have 44 advance engineering and design projects before us at this time; is that correct?

General CHORPENING. There are 45, sir.

Colonel STARBIRD. I can explain that. The project, Columbia River local protection, Mr. Chairman, really provides for two separate locations. The authorization was for the development of 35 separate locations, and 2 of the locations are carried here under Columbia River local protection.

That is the difference between your figure of 29 flood-control projects and the general's figure of 30.

Mr. DAVIS. That covers 2 different locations, but for the purposes of your listing here, it is included as 1 project, and that is the one for which $75,000 is tentatively allocated?

General CHORPENING. That is correct, sir.

Mr. DAVIS. Do you carry those separately in a portion of your recommendations?

General CHORPENING. That is correct, sir.

DATA ON PLANNING PROJECTS

Mr. DAVIS. With respect to the 45 advance engineering and design projects, will you please submit a tabulation similar to the one which you prepared which appeared in the record beginning on page 255, for the current fiscal year, and which shows the authorization, the estimated cost at the time of authorization, your present estimated cost, what prior allotments have been made, and the budget estimate now before us; the benefits-to-cost ratio; the specific benefits contemplated; the power installations contemplated, and the status of the plans as of the date of the submission?

General CHORPENING. That is submitted herewith, sir.

(The information requested is as follows:)

Data on planning projects in 1955 budget

NAVIGATION

State and project	Authorizing legislation	Estimated Federal cost at time of authorization	Present estimated Federal cost	Approved budget estimate, fiscal year 1955	Benefit-to-cost ratio	Breakdown of benefits		Power installation contemplated	Percentage of completion of plans[1]	Obligations in fiscal year 1953	Project justification
						Type	Percent				
ALABAMA								*Kilowatts*	*Percent*		
Jackson lock and dam.	River and Harbor Act, Mar. 3, 1909.	$28,546,000	$28,546,000	$55,000	1.52	Navigation	100		4		Replacement for 3 locks and dams on the Tombigbee-Warrior Waterway. It will reduce multiple lockages, travel time, and transportation costs. Waterway is vital to the movement of iron ore to Birmingham and steel products from Birmingham.
CALIFORNIA											
Redondo Beach Harbor.	River and Harbor Act, May 17, 1950.	3,456,000	4,368,000	50,000	1.79	do	100		0		Reconstruction and extension of existing north breakwater and construction of south breakwater. Project would establish a harbor with facilities for about 700 small craft and make possible the protection and filling of a rapidly eroding section of shore.
HAWAII											
Kawaihae Harbor	do	5,525,500	6,679,100	50,000	1.86	do	100		0		Deep-draft harbor which will serve West Hawaii. Such a harbor would provide supply line to an area of great defense importance and would have a substantial and beneficial effect on the economy of the Territory of Hawaii.
ILLINOIS											
Illinois Waterway, Calumet-Sag Channel.	1946 and prior River and Harbor Acts.	46,900,000	126,343,000	40,000	2.55	do	100		34	$2,170	This project connects the Great Lakes with the Mississippi River system. Industrial expansion in the area is demanding expansion in transportation facilities. Commerce on waterway is increasing despite limiting facilities. Anticipate trebling commerce upon completion of the improvement.

See footnotes at end of table.

Data on planning projects in 1955 budget—Continued

NAVIGATION—Continued

State and project	Authorizing legislation	Estimated Federal cost at time of authorization	Present estimated Federal cost	Approved budget estimate, fiscal year 1955	Benefit-to-cost ratio	Breakdown of benefits		Power installation contemplated	Percentage of completion of plans[1]	Obligations in fiscal year 1953	Project justification
						Type	Percent				
INDIANA								*Kilowatts*	*Percent*		
Markland locks and dam, Indiana, Kentucky, and Ohio.	River and Harbor Act, Mar. 3, 1909.	[2]$41,000,000	$77,112,000	$50,000	1.3	Navigation	100		22.0	$165,777	Replacement for 5 locks on the Ohio River. Waterway traffic in this section is the second densest on the Ohio River. Lock No. 37, one of those to be replaced, was built in 1911, has deteriorated to such an extent that failure is a threat. Movements of coal and other commodities in this area are essential to defense industries.
KENTUCKY											
Greenup locks and dam.	do	40,000,000	64,980,000	50,000	1.15	do	100		24	159,887	Replacement of existing locks and dams Nos. 27, 28, 29, and 30 in the Ohio River and No. 1 on the Big Sandy River. Existing locks are approaching the end of their useful economic life and are being subjected to greatly increased use. A single pool for river traffic will permit the efficient movement of vital commodities in one of the most heavily trafficked reaches of the Ohio River.
LOUISIANA											
Plaquemine-Morgan City alternate route.	River and Harbor Act, July 24, 1946.	8,000,000	24,350,000	80,000	1.37	do	100		33.0	36,530	Benefits to the national economy will result from relief of water-traffic congestion at New Orleans, acceleration of shipping schedules, and elimination of possibility of a rail network tieup in time of emergency as would be the case if lock facilities at New Orleans were damaged.
WEST VIRGINIA											
Hildebrand lock and dam.	River and Harbor Act, May 17, 1950.	13,094,000	13,912,000	40,000	1.80	do	100		28.0	65,685	This project will replace locks 12 and 13 on th Monongahela River, which have reached the end of their useful life and have become uneconomical and impractical to maintain. Increased commerce on the river has accentuated the inadequacy and obsolescence of the existing facilities. This commerce is essential to defense industries.

ARIZONA											
Painted Rock Reservoir.	1950 Flood Control Act.	$25,800,000	$34,933,000	$100,000	1.52	Flood control.	100	.....	36	$159,243	Painted Rock Reservoir would provide protection under average conditions for 203,000 acres of cultivated land and improvements valued at $216,000,000. The developed area is mostly agricultural and includes extensive irrigation works, two long highway bridges and one railroad bridge, and the atomic energy installation on Salton Sea. The project would also retain a large volume of sediment that would otherwise be deposited in the Colorado River below Laguna Dam. In addition to the above the project is vital to the operation of the 1944 Water Treaty with Mexico, and the Bureau of Reclamation has raised and strengthened levees on the assumption that Painted Rock Reservoir would be constructed.
CALIFORNIA											
Russian River Reservoir.	.....do.....	11,522,000	15,250,200	150,000	2.24	.....do.....	20	.....	45	179,553	The flood plain of the Russian River is predominately an agricultural area, and is an important source of food supply for the San Francisco-Oakland metropolitan area. Portions of the city of Healdsburg, the town of Guerneville and a number of summer resort areas are also subject to inundation during major floods. A total of 29,500 acres of land were flooded in February 1940 with estimated direct and indirect damages at about $2,900,000. The authorized project, when constructed, will alleviate damages due to floods and permit full agricultural and industrial production in an area relatively near to the strategic San Francisco-Oakland metropolitan area. In addition, the supplemental water which will be made available incidental to flood control operation of the reservoir will be used to meet present and future domestic water demands at Santa Rosa, Petaluma, Sonoma, and adjoining areas; to augment existing water supplies for agricultural purposes; and to maintain a minimum flow of 200 cubicfeet per second at Guerneville and other resorts on the river during the summer months for recreational purposes.
						Improvement of water supplies.	20				
						Preservation and enhancement of recreational areas.	60				

See footnotes at end of table.

Data on planning projects in 1955 budget—Continued

FLOOD CONTROL—Continued

State and project	Authorizing legislation	Estimated Federal cost at time of authorization	Present estimated Federal cost	Approved budget estimate, fiscal year 1955	Benefit-to-cost ratio	Breakdown of benefits		Power installation contemplated	Percentage of completion of plans[1]	Obligations in fiscal year 1953	Project justification
						Type	Percent				
CALIFORNIA—con.								*Kilowatts*	*Percent*		
San Antonio and Chino Creeks.	1938 Flood Control Act.	$9,000,000	$11,941,000	$80,000	[2]1.18	Flood control	100	.....	55	$65,000	The project will protect 57,000 acres of highly improved agricultural property and valuable residential, commercial and industrial property. The dam and channel are coordinate parts of a flood control project, each part being essential to the satisfactory operation of the other. Unless the channel is constructed in coordination with the dam, damage by driftage from the inadequate flood protection improvement and undermining of bridge piers and abutments would cut all highway and railroad routes between Los Angeles and the east. Three transcontinental railroads and 1 interconnecting carrier cross San Antonio Creek and are affected by its floods. They are the Union Pacific, Santa Fe and Southern Pacific Railroads and the Pacific Electric. Normal daily traffic consists of 4,000 freight cars and 435 passenger cars. Eighty percent of the total east-west traffic from Los Angeles moves across San Antonio Creek. In the flooded area and subject to isolation, damage and shut down from San Antonio floods are 20 industrial plants including a $60,000,000 guided missile plant. Other improvements important to national defense crossing the channel and flood plain include several strategic major highways, the high tension electric transmission line from Hoover Dam to Los Angeles, and a similar line from Hoover Dam to San Diego which is now under construction. Any interruption to either highway or railroad transportation would adversely affect Kaiser steel mill (Fontana plant) only a few miles east.

San Joaquin River and tributaries.	1944 Flood Control Act.	2,875,000	5,598,000	40,000	1.5	do	100		59	8,097	The levee and channel improvement project, together with reservoir units, will provide flood protection to a rich agricultural area of approximately 140,000 acres; to numerous commercial and public installations and a suburban area south of the city of Stockton. There are also several important military installations in the area subject to flooding, including the Sharpe General Depot near Lathrop with annexes in Stockton and at Stockton Field. Damages in excess of $4,500,000 were suffered during the 1950 flood in an area along the San Joaquin River below the mouth of the Merced River. During the 1952 flood, damages amounting to $320,000 would have been prevented by the project.
COLORADO											
Chatfield Reservoir.	1950 Flood Control Act.	26,300,000	31,350,000	50,000	1.39	do	100		0	0	Chatfield Reservoir is a unit of the South Platte River Basin. The project in combination with Cherry Creek Reservoir will provide flood protection for the Denver metropolitan area. The project will control the design flood on the South Platte at the site to a discharge within the capacity of the improved channel through Denver and will reduce flooding in rural areas. It will provide complete protection against the maximum flash floods that would result from the occurrence over the Plum Creek Basin of storms equal in magnitude to those which occurred in May 1935 and June 1921. It will be feasible to fit the Chatfield Reservoir into the integrated plan of ultimate development so that some of its flood storage capacity can be allocated to potential upstream reservoirs and supplanted with conservation storage.
CONNECTICUT											
Hartford (Folly Brook).	do	239,000	292,900	25,000	5.6	do	100		0	0	The Folly Brook unit is an extension of the existing local protection project for Hartford, Conn., which provides protection for the principal industrial areas of the city. The Folly Brook unit will protect approximately 100 acres of residential, commercial and industrial development within Hartford and the adjoining town of Wethersfield that are subject to flooding from high runoff in the brook backwater, from the Connecticut River, or a combination of both. The project is required to augment existing flood control works and to complete the protection to be afforded by such works.

See footnotes at end of table.

Data on planning projects in 1955 budget—Continued

FLOOD CONTROL—Continued

State and project	Authorizing legislation	Estimated Federal cost at time of authorization	Present estimated Federal cost	Approved budget estimate, fiscal year 1955	Benefit-to-cost ratio	Breakdown of benefits		Power installation contemplated	Percentage of completion of plans[1]	Obligations in fiscal year 1953	Project justification
						Type	Percent				
IDAHO								*Kilowatts*	*Percent*		
Columbia River local protection projects, Idaho, Oregon, Washington, Utah, Nevada, and Montana:											
(*a*) Portneuf River and Marsh Creek.	1950 Flood Control Act.	$675,000	$1,186,000	($75,000 ($25,000	1.13	Flood Control.	100	.....	18	0	The project will provide protection against flood damage to urban and suburban areas of Pocatello and to agricultural lands along portions of Portneuf River and Marsh Creek. In Pocatello the levee and channelization works would protect commercial, industrial and residential areas and municipal improvements. The project would alleviate the almost annual threat of flood damage which includes possible loss of life during the spring snow-melt flood season, reduce the expense of flood fighting activities, and reduce the economic loss which results from interruption of normal activities.
(*b*) Teton River.	....do	495,000	659,000	(15,000)	1.3	....do.....	100	.....	33	0	The lower 20 miles of Teton River divides into 2 main channels. Cultivated lands lying between and along each side of these channels are flooded during periods of high water. Channel erosion occurs at numerous locations and there is danger of channel formation in numerous secondary channels. Much of the lowlands along each of the streams is flooded to a variable degree during almost all high water periods. At times, floods are also caused by runoff with ice formation in the channels.

ILLINOIS										
South Beloit, Rock River.	1948 Flood Control Act.	100,000	117,100	10,000	5.1	....do.....	100	.....	0	0	The project will protect the town of South Beloit, Ill., against any flood on Turtle Creek known to have occurred in the past 100 years. Small portions of Beloit, Wis., will receive incidental protection. During the past 100 years South Beloit has suffered damages from 13 major floods, several of which have individually caused damages in excess of the estimated cost of constructing the project. In February 1937 the flood of highest stage of record, caused damages estimated at $220,000 at 1953 price levels.
The Sny Basin....	1946 Flood Control Act.	4,854,944	18,960,000	60,000	1.75	....do.....	100	.....	43	$34,667	The project will provide flood protection for an agricultural area of 125,000 acres, of which 22,000 acres have been rendered unsuitable for production because of frequent flooding. A major portion of the 22,000 acres is expected to be restored to production by the project. Of the total acreage 110,000 acres are included in the Sny Island Levee Drainage District. Population of the flooded area is about 6,350. Tracks of 3 major railroads, 2 Federal highways, and 1 State highway will be protected by the project. Flood damages have occurred on the average of once a year.
INDIANA										
Greenfield Bayou levee.	....do	434,000	1,118,000	20,000	3.7	....do.....	100	.....	0	0	The net grade of the proposed levee will provide protection against a flood flow equal to that expected to occur about once every 14 years, assuming other proposed or existing levees in this area are effective. This grade is considered adequate for protection against most floods occurring during the growing season and is in keeping with the approved general plan of protection of agricultural areas in the Wabash River Basin. The project will protect a fertile agricultural area of 11,370 acres, about 75 percent of which is now under cultivation. The extent of the flood damages suffered in the area, as reflected by the high average annual benefits attributable to the project, the ineffectiveness of the existing spur levee, which at best affords only a limited degree of protection to a small portion of the area, and the fact that the community has seen fit to provide at its own expense some degree of flood protection, are indicative of the necessity of positive relief from floods.

Data on planning projects in 1955 budget—Continued

FLOOD CONTROL—Continued

State and project	Authorizing legislation	Estimated Federal cost at time of authorization	Present estimated Federal cost	Approved budget estimate, fiscal year 1955	Benefit-to-cost ratio	Breakdown of benefits		Power installation contemplated	Percentage of completion of plans[1]	Obligations in fiscal year 1953	Project justification
						Type	Percent				
INDIANA—con.								*Kilowatts*	*Percent*		
Mansfield Reservoir.	1938 Flood Control Act.	$1,895,000	$5,366,000	$70,000	1.4	Flood Control Other	83 17	----------	34	0	The Mansfield Reservoir project is one of 80 authorized reservoir units for control of floods on the Ohio River and tributary streams. Only two reservoirs are authorized for construction in the Wabash River Basin, one of the large contributors to floods on the Ohio River. The operation of the reservoir will reduce flood stages along Raccoon Creek below the dam and contribute toward reduction of flood flows along the Wabash and Ohio Rivers. Raccoon Creek, on which the reservoir is situated, enters the Wabash River at mile 238 above a section of the stream [illegible] which many levee units are located. The operation of the reservoir will increase the degree of protection afforded by the levee units, most of which were originally constructed by the landowners protected thereby. In addition, flood stages will be reduced along unprotected areas which will lessen the average annual damages being sustained under present conditions.
KENTUCKY											
Buckhorn Reservoir.	----do----------	2,570,000	6,618,000	40,000	1.3	Flood control	100	----------	0	0	Buckhorn Reservoir is a unit for controlling floods in the Ohio River Basin. The project will control 73 percent of the drainage area of the Middle Fork of the Kentucky River, thereby contributing materially to the reduction of floods in the Kentucky River Valley in general and specifically in the vicinity of Beattyville, the county seat of Lee County, a rural shopping center, about 42 miles below the damsite, which has been subjected to repeated flooding. The project in combina-

											tion with two other authorized reservoirs in the Kentucky River Basin, will appreciably reduce flood stages on the Kentucky and Ohio Rivers and will contribute to reduction of major flood flows in the Mississippi River.
Jackson	1944 Flood Control Act.	66,000	230,000	12,000	1.5	do	100		10	0	The project will reduce flood heights at Jackson from 4 to 6 feet on all floods, resulting in the elimination of 75 percent of the estimated average annual flood damages. Major floods occurred in 1927, 1939, and 1948, causing damages estimated at $32,100, $31,700, and $30,000, respectively. In addition to these major floods, considerable loss has been caused by several minor and more frequent floods. Due to the precipitous stream slopes and small drainage area, floods reach their peak within a few hours after a heavy rainfall; accordingly there is always danger of loss of life.
MASSACHUSETTS											
Buffumville Reservation.	1941 Flood Control Act.	820,000	2,566,000	25,000	1.5	do Other	98 2		59	0	The project, as one unit in the comprehensive plan of improvement for flood control and other purposes in the Thames River Basin, will produce major reductions in flood damages at Webster and Dudley, Mass., and Thompson (Grosvenordale), Conn., industrial and business centers on the French River. In addition, flood damages will be materially reduced at damaged centers extending from Putnam, Conn., on the Quinebaug River downstream to Norwich, Conn., on the Thames River. The flood of March 1936 caused damages amounting to $3,130,000 on the French River below the damsite. Damages amounting to $7,724,000 would be suffered in the same area in event of a recurrence of the 1936 flood under current conditions. Operation of the Buffumville project would prevent damage on the French River estimated at $3,720,000 in such a recurrence. In addition, damages amounting to $643,000 would be prevented in a recurrence of the flood of record on the Quinebaug, Shetucket, and Thames Rivers. Benefits will also be afforded downstream power developments and the pollution nuisance caused by industrial wastes and domestic sewage lessened.

See footnotes at end of table.

Data on planning projects in 1955 budget—Continued

FLOOD CONTROL—Continued

State and project	Authorizing legislation	Estimated Federal cost at time of authorization	Present estimated Federal cost	Approved budget estimate, fiscal year 1955	Benefit-to-cost ratio	Breakdown of benefits		Power installation contemplated	Percentage of completion of plans[1]	Obligations in fiscal year 1953	Project justification
						Type	Percent				
MISSOURI								*Kilowatts*	*Percent*		
Pomme de Terre Reservoir.	1938 and 1944 Flood Control Acts.	$6,200,000	$22,446,000	$15,000	1.29	Flood control. Navigation	87 13	----------	82	$67,271	The Pomme de Terre Reservoir is a key unit of the recommended system of reservoirs in the Osage Basin which in turn is an integral part of the flood-protection plan for the Missouri River Basin. The Osage Basin is devoid of flood-control works and the lower Missouri River Basin receives only meager protection from the inadequate farm levees. These are breached or overtopped almost every year. The May 1943 flood on the lower Missouri River originated almost entirely in the Osage Basin and resulted in record stages on the Osage River and near record stages on the Missouri River below Jefferson City. As a unit of the recommended system in the Osage River Basin, this reservoir will function to provide flood protection to 160,000 acres of rich highly developed agricultural land along the lower Missouri River; 26,000 acres of land in the Osage Basin; 5,500 acres of land along the Pomme de Terre River below the dam. Navigation on the Missouri and Mississippi Rivers will also benefit through release of conservation storage during the periods of low flow.
MONTANA											
Billings	1950 Flood Control Act.	2,681,000	3,665,600	25,000	1.35	Flood control.	100	----------	0	0	The project will protect the city of Billings, Mont., from floods on the Yellowstone River, Hogans Slough, Canyon Creek, and Alkali Creek. Virtually all of the Billings urban and suburban areas, comprising a population of some 40,000 people, is subject to inundation with resulting damages to residences, business estabilshments, roads,

											bridges, utilities, railroads, and oil refineries. In addition important intangible benefits will result through elimination of the hazard of loss of life, improvement of sanitation, and the provision of opportunities for new homes and new investments. The 1937 flood caused damages estimated at $2,178,150 and caused the loss of 3 lives.
NEVADA											
Mathews Canyon Reservoir.	....do....	666,000	755,000	40,000	[4] 1.32	....do....	100	.....	0	0	Pine Canyon and Mathews Canyon Reservoir would provide protection to about 80 miles of main line of the Union Pacific R. R., to county roads along the narrow canyons, to most of the town of Caliente, Nev., and to about 3,000 acres of irrigated lands. Major floods occurred in 1910, 1938, and 1946 causing damage to the Union Pacific R. R. of $700,000, $188,000, and $226,000 respectively.
NEW MEXICO											
Chamita Reservoir.	1948 and 1950 Flood Control Acts.	30,833,000	26,315,000	175,000	[5] 1.59	....do....	100	.....	42	53,381	Substantial benefits to the Middle Rio Grande Valley will result from flood-control phase of the comprehensive plan through flood and sediment control, and improved drainage. The cities of Albuquerque, Espanola, Socorro, Belen, Bernalillo, and Truth or Consequences (formerly Hot Springs) and the scattered population and public works of the valley will be afforded protection against damaging floods. Sandia Base, an important Armed Forces special weapons project and Atomic Energy Commission installation, and Kirtland Air Force Base, a unit of the Special Weapons Command, located adjacent to Albuquerque, N. Mex., are adversely affected by floods. These bases are dependent upon the city of Albuquerque for certain utilities, supplies, and rail facilities and a large percentage of the personnel employed by these bases reside in the city and along the valley.

See footnotes at end of table.

Data on planning projects in 1955 budget—Continued

FLOOD CONTROL—Continued

State and project	Authorizing legislation	Estimated Federal cost at time of authorization	Present estimated Federal cost	Approved budget estimate, fiscal year 1955	Benefit-to-cost ratio	Breakdown of benefits		Power installation contemplated	Percentage of completion of plans[1]	Obligations in fiscal year 1953	Project justification
						Type	Percent				
NEW YORK								*Kilowatts*	*Percent*		
Allegheny River Reservoir.	1936, 1938 and 1941 Flood Control Acts	$35,700,000	$87,260,000	$50,000	1.26	Flood Control.	100	.....	9	0	The Allegheny River Reservoir project is a unit of the comprehensive plan for Ohio River Basin flood control and is a key unit in the reservoir system for the protection of the Allegheny Valley, metropolitan area of Pittsburgh, and the Upper Ohio River Valley. It will afford a substantial degree of flood protection for these extensively developed and heavily populated areas. The reservoir would have the additional function of discharge regulation which would be invaluable for industrial and domestic water supply and pollution abatement. Discharge regulation would prevent ice gorges during the winter season and would be an aid to navigation during the summer low-water season. It would protect Warren, Pa. against the maximum flood of record, and in conjunction with the existing Tionesta Reservoir would practically eliminate Allegheny River floods at Oil City, and Franklin, Pa. It would provide additional flood protection to the highly industrialized Pittsburgh area and a measure of additional flood protection to the Ohio River Valley which is also highly industrialized. The project would reduce a flood of the magnitude of the March 1913 flood approximately 2.7 feet at Pittsburgh, Pa.

Davenport Center Reservation.	1936 and 1938 Flood Control Acts.	3,065,000	11,045,000	50,000	2.04	do	100		68	$38,540	This project is a unit of the southern New York flood control project and will afford flood reductions of primary importance at Binghamton and Oneonta, N. Y., and substantially reduce floods in rural areas and at the villages of Unadilla, Sidney, Conklin, Endicott, Johnson City, Vestal, and Owego, N. Y. The project is required to prevent possible overtopping of existing protective works at Binghamton, with consequent heavy losses and damage to flood control structures completed to date by the Government at a cost of $3,000,000. The height of the local protection structures at Binghamton was selected on the basis of reduction that would result from construction of upstream reservoirs which included Davenport Center. In addition, numerous installations important to national defense are located in the areas affected by floods.
Wellsville	1950 Flood Control Act.	581,000	918,000	26,000	1.38	do	100		59	23,291	The project will eliminate about 85 percent of the average annual flood damages at Wellsville and will protect the village and its utilities and numerous industrial plants very important to national defense. Floods of May 1946 and November 1950 caused damages of $166,200 and $400,000 respectively.
OREGON											
Pendleton	do	459,600	607,000	15,000	1.6	do	100		0	0	The project is situated on the Umatilla River and would protect the city of Pendleton and the main line of the Union Pacific Railroad from floods. The business district and part of the residential area are protected by an inadequate levee system. Failure of the existing levees could cause extensive damage involving 75 blocks of the business district and residential sections and about 60 acres of adjoining suburban area. Many floods have encroached upon the existing levee freeboard necessitating a 24-hour guard during flood periods. Flood damage resulting from a major levee failure may be expected to amount to $5 million. The proposed improvements would eliminate 97 percent of the average annual flood damages.

See footnote at end of table.

Data on planning projects in 1955 budget

FLOOD CONTROL—Continued

State and project	Authorizing legislation	Estimated Federal cost at time of authorization	Present estimated Federal cost	Approved budget estimate, fiscal year 1955	Benefit-to-cost ratio	Breakdown of benefits		Power installation contemplated	Percentage of completion of plans[1]	Obligations in fiscal year 1953	Project justification
						Type	Percent				
PENNSYLVANIA								*Kilowatts*	*Percent*		
Bradford	1939 Flood Control Act.	$6,467,000	$8,492,000	$80,000	1.1	Flood control	100		20	$36,029	Bradford and vicinity, which has a population of more than 20,000 and within a radius of 10 miles a population of about 35,000, is the main business center of the surrounding area and has long been known for its importance in producing oil, oil refining, manufacturing, trade and transportation. The oil fields after 50 years of production still produce annually over 12,000,000 barrels of the highest grade crude oil. The producers are now engaged in intensive scientific methods of secondary oil recovery. About 540 acres, 27.4 percent of the total area of the city of Bradford, is subject to flooding. The 1947 flood affected 27 industrial, 350 commercial, and 1,350 residential properties, 14 churches, and other establishments in Bradford and the valley downstream to Foster Brook. One death was attributed to this flood and 13 persons suffered injury or shock. The proposed improvement would produce real and important intangible benefits by preventing loss of life and bodily injury to residents, eliminating serious fire hazards during floods when oil-covered water spreads through the town, and preventing insanitary conditions caused by polluted flood water.
RHODE ISLAND											
Woonsocket	1944 Flood Control Act.	803,000	1,826,000	30,000	1.4	do	100		0	0	Construction of the project will substantially reduce flood damages in the immediate urban areas protected. Twenty industrial plants would be benefited by the reduced flood stage effected by the project, including 10 textile, 2 bulk oil, 2 machine tool, 2 rubber,

											1 clothes and 3 fabric manufacturing establishments. Several of the plants are currently engaged in defense contracts and others have defense potential. The flood of March 1936 (the maximum of record) caused damages amounting to $400,000 in Woonsocket. Due to a large increase in business activity since then, a recurrence of a flood of that magnitude under present conditions would cause damages exceeding $1,000,000. This project, by itself, would prevent an estimated $230,000 of those damages in the event of such a recurrence.
UTAH											
Spanish Fork River.	1946 Flood Control Act.	74,500	219,000	16,000	3.1	....do.....	100	.....	0	0	The project is designed for the control of floods in the Spanish Fork River Valley which is now flooded about twice every 3 years. These floods cause damage to crops and improvements, including irrigation works, roads, and railroads within a flood plain of about 2,250 acres. The area derives most of its income from agricultural and livestock activities. The project work would provide adequate protection to about 2,250 acres of valley lands, to highways U. S. 6 and 91 between Salt Lake City and the southern California coast, and to 4 railroad lines, based on the design flood of 1,500 cubic feet per second. However, the flood of April-May 1952 reached a record peak flow of 3,400 cubic feet per second which inundated about 4,300 acres of agricultural lands and caused damages estimated at $600,000.
WASHINGTON											
Colfax.....	1944 Flood Control Act.	290,100	2,361,000	25,000	1.32	....do.....	100	.....	32	0	The city of Colfax, Wash., with a population of some 3,100 persons is subject to damage from floods on the Palouse River and South Fork Palouse River, which occur frequently. In 1948 three major floods occurred. An estimated 30 city blocks, including the main business district and adjoining suburban areas are within the flood plain, this area includes business and residential properties. The project, when constructed, will eliminate 92 percent of the average annual damages now suffered.

See footnotes at end of tble.

Data on planning projects in 1955 budget—Continued

FLOOD CONTROL—Continued

State and project	Authorizing legislation	Estimated Federal cost at time of authorization	Present estimated Federal cost	Approved budget estimate, fiscal year 1955	Benefit-to-cost ratio	Breakdown of benefits		Power installation contemplated	Percentage of completion of plans[1]	Obligations in fiscal year 1953	Project justification
						Type	Percent				
WASHINGTON—con.								*Kilowatts*	*Percent*		
Eagle Gorge Reservation.	1950 Flood Control Act.	$16,300,000	$19,855,300	$170,000	1.27	Flood control	100		39	$203,020	The project will provide a high degree of flood protection to approximately 17,000 acres of valley lands starting in the vicinity of Auburn and extending north to Renton and Seattle. In the past 50 years there have been at least 26 floods which have flooded the valley lands. The project is necessary for the normal continued economic development of the Seattle area. In addition to providing a high degree of flood protection in the Green River Valley, the project will permit improved agricultural practices, prevent disruption of highway and railroad transportation, and will allow expansion of industry into the upstream valley. Water storage in the reservoir during the nonflood season for later use in the dry summer season to augment low flows will benefit fish life and domestic water supplies and will provide the means for possible irrigation of agricultural lands.
WYOMING											
Greybull	do	522,000	714,000	40,000	2.18	do	100		0	0	The project would protect Greybull, Wyo. from recurring floods. Five major floods have occurred on the Big Horn River since 1887 and numerous minor floods. It is estimated that a flood approaching the design flow would cause property damage of about $900,000. Greybull, a community of 2,500 people, is the division point of an important north-south railroad route which traverses a large oil-producing area of Wyoming and serves as the main transportation facility for production from a large livestock raising, ir-

Jackson Hole	do	1,447,400	1,915,000	50,000	1.8	do	100		0	0	rigated farming and timber-producing area as well as the petroleum, refined petroleum products and sulfur-producing industries located along the way. A major flood, by disrupting the railroad facilities at Greybull would have an adverse effect upon the economy of the area. The project is a unit of the general comprehensive plan for flood control and other purposes in the Columbia River Basin. Jackson Hole Valley in the Snake River Basin is an important livestock production area. It consists essentially of grass and hay lands which provide pasture for wintering of livestock and elk herds. The livestock which winters in the valley secures summer pasture in the upland areas. The Jackson Hole flood-control project will protect the productive capacity of the valley and the major installations pertinent to functioning of the livestock industry.
MULTIPLE-PURPOSE INCLUDING POWER											
ALABAMA											
Fort Gaines lock and dam.	River and Harbor Act, July 24, 1946.	(6)	$82,793,000	$20,000	1.16	Flood control Navigation Power Other	2.2 19.8 77.5 .5	130,000	21	$190,163	In addition to providing more economical transportation on the Chattahoochee River, this project will provide a large block of hydroelectric power in an area where it is urgently needed. The project will exert a beneficial influence on the economic structure of the area.

See footnotes at end of table.

Data on planning projects in 1955 budget—Continued

MULTIPLE-PURPOSE INCLUDING POWER—Continued

State and project	Authorizing legislation	Estimated Federal cost at time of authorization	Present estimated Federal cost	Approved budget estimate, fiscal year 1955	Benefit-to-cost ratio	Breakdown of benefits		Power installation contemplated	Percentage of completion of plans[1]	Obligations in fiscal year 1953	Project justification
						Type	Percent				
GEORGIA								*Kilowatts*	*Percent*		
Hartwell Reservoir.	1944 and 1950 Flood Control Acts.	$68,377,000	$90,637,000	$50,000	1.48	Flood control Navigation Power	2 2 96	180,000	33	$379,107	The Hartwell project is located in the Savannah River Basin. Power such as will be developed by the Hartwell project is urgently needed for the rapidly expanding industries in the Southeast. Recent surveys of the Federal Power Commission and the Southeastern Power Administration indicated that the normal power requirements in North Carolina, South Carolina, and Georgia during the next decade will greatly exceed the supply of power unless additional plants are built. The Hartwell project will improve power generation at the Clark Hill Reservoir by storing the flood flows and releasing more water during low flow periods. This will benefit the Clark Hill project by increasing the prime capacity and by converting annually a large amount of energy from secondary to prime energy, thereby increasing the annual power value. The operation of the Hartwell project will assure a depth of 8 feet all year round in the present river channel between Savannah and Augusta, an increase of about 1 foot over that which can be assured by Clark Hill alone. The increased flow from Hartwell in low flow seasons will reduce the cost of providing a 9-foot navigation project to Augusta, recently authorized by Congress, and the annual maintenance will be reduced. Also, the coordinated operations of Hartwell and Clark Hill Reservoirs will eliminate frequent floods over a vast area of undeveloped valley lands below Augusta. These lands are among the most fertile in the southeastern

											United States and could be very productive. During a period of national emergency they would produce substantial added farm products. After construction of Hartwell, flooding which now occurs several times annually will be reduced to a frequency of once in 10 years.
MONTANA											
Fort Peck Dam (second power plant).	River and Harbor Act, May 18, 1938.	20,000,000	23,301,500	220,000	1.82	....do.....	100	80,000	25	25,000	The hydroelectric plant at Fort Peck is connected to the northwest power pool, and is used to mitigate the power shortage in this pool during peak-load periods. During World War II, full generating capacity of the existing plant was furnished to the northwest power pool, which serves extensive copper and aluminum refining industries, numerous other factories, electric railroads, and towns and extensive highly developed agricultural areas.
Libby Reservoir...	1950 Flood Control Act.	239,077,000	263,321,000	46,000	1.82	....do.....	92	630,000	9	238,148	The demand for power in the Pacific Northwest to expand and stabilize operation of industries essential to national defense is very urgent. The Libby Reservoir, considered as operating in the present Federal system of power-generating plants consisting of Bonneville and Grand Coulee, already in operation, Hungry Horse, Albeni Falls, Chief Joseph, McNary, and The Dalles, now under construction would add approximately 805,000 kilowatts of average continuous power, of which 248,000 kilowatts would be at site and the remaining 557,000 kilowatts downstream in the United States. Water stored in Libby Reservoir will be usable for generating power through 994 feet of head at downstream plants in the United States, and 345 feet of head at downstream plants on the Kootenai River in Canada. In addition to very important blocks of power that would be developed by the Libby project, normal storage and power operation will provide complete flood control for the highly developed agricultural area of 46,800 acres in the Kootenai Flats and will significantly decrease flood heights in the lower Columbia River. Water stored during high spring flows and released from Libby during low flow will also increase the depth of water in the Lower Columbia River channel for navigation purposes.
						Flood control	8				
						Navigation	(?)				
						Recreation	(?)				

See footnotes at end of table.

Data on planning projects in 1955 budget—Continued

MULTIPLE-PURPOSE INCLUDING POWER—Continued

State and project	Authorizing legislation	Estimated Federal cost at time of authorization	Present estimated Federal cost	Approved budget estimate, fiscal year 1955	Benefit-to-cost ratio	Breakdown of benefits		Power installation contemplated	Percentage of completion of plans[1]	Obligations in fiscal year 1953	Project justification
						Type	Percent				
TENNESSEE								*Kilowatts*	*Percent*		
Carthage Dam	River and Harbor Act, July 24, 1946.	$19,900,000	$43,073,000	$40,000	1.55	Power	100	92,000	26	$15,092	The hydroelectric power at this project is critically needed in the rapidly expanding area, and will be fed into the TVA system. Due to the large impact of the defense industries in this area power requirements are continually increasing.
OREGON											
Hills Creek Reservoir.	1950 Flood Control Act.	23,721,000	32,261,000	125,000	2.04	Flood control Power Navigation Irrigation Pollution abatement. Water supply	62 27 1 4 4 2	30,000	47	261,589	Hills Creek Reservoir will supplement the Lookout Point project, which now is nearing completion, and provide almost complete control of flood runoff from a combined drainage area of 991 square miles, or about ¾ of the total Middle Fork Willamette drainage basin area. Hills Creek and Lookout Point projects will be operated as an integrated unit of the plan for the Middle Fork to provide flood control, power, and other benefits. Early construction of the Hills Creek project is necessary in order to permit coordinated operation of Hills Creek and Lookout Point projects, for flood control, power generation, and other purposes. The power contribution will consist not only of at-site generation, but of increased output at Lookout Point project, because of increased flow. The net annual power benefit, including downstream power benefits creditable to the project, is computed at $833,200. Flood control benefits are estimated at $1,881,700 annually.

WASHINGTON											
Ice Harbor lock and dam.	River and Harbor Act, Mar. 2, 1945.	88,792,000	135,930,000	20,000	1.19	Power Navigation Recreation Irrigation	80.0 17.0 .4 2.6	195,000	23.0	129,782	Present power demands in the Pacific Northwest are in excess of capabilities, and power shortages are retarding industrial and other development essential to regional economic growth and to prosecution of the national defense effort. The major load center for Ice Harbor power will be the critical Pasco-Kennewick Richland defense area, now power deficient, and the Hanford Works of the Atomic Energy Commission. The project is an essential unit in the authorized slackwater navigation development of the lower Columbia River and the lower Snake River.

[1] Percentages are estimated at end of fiscal year 1954 and are based on the total cost of all planning.
[2] For a project at the Fernbank site to replace 4 locks and dams.
[3] Reservoir and channel.
[4] For Mathews and Pine Canyons.
[5] Comprehensive plan.
[6] Authorization did not consider structure at this site.
[7] Less than 1 percent.

General CHORPENING. I would like to add something, if I could, to my earlier general remarks.

In our allowance letter from the Bureau of the Budget, we received this instruction this year in connection with planning:

> It is the aim of the Bureau policy to continue advance engineering and design at about the 1954 program level, with a view to providing a shelf of a reasonable number of high priority projects.

That is a direct quotation from that letter.

Mr. DAVIS. That is a direction from the Bureau of the Budget and provided the guidelines under which this 44 or 45 projects were selected; is that correct?

General CHORPENING. That is correct, sir.

ADVANCE PLANNING NAVIGATION PROJECTS

JACKSON LOCK AND DAM, ALABAMA

Mr. DAVIS. The first of the requests for advance planning on navigation projects is at the Jackson lock and dam in Alabama, where we have had some discussion of that particular project in connection with the Warrior lock and dam.

General CHORPENING. That is correct.

Mr. DAVIS. This matter was before us in our hearings last year, and I believe at that time we provided the first funds for advance planning. Now we have before us a request for an additional $55,000 for planning.

How has that planning work been coming along, and what do you foresee in the future with respect to your planning on that project?

Colonel DIXON. We expect by June 30, 1954, Mr. Chairman, that we will have general design studies for Jackson lock and dam completed.

The detailed planning which, of course, goes further than the general design study, will be started. This money will continue that planning phase, getting into the details of the definite design of a lock and a dam, and will bring it to a stage that an approximate additional $55,000 would allow us to be ready to go to construction.

Mr. DAVIS. Do you mean $55,000 after fiscal year 1955?

Colonel DIXON. Yes, sir. In other words, by the end of fiscal year 1956, we could start construction.

REDONDO BEACH HARBOR, CALIF.

Mr. DAVIS. The second of the planning projects under navigation is the Redondo Beach Harbor in California.

This is the initial request for funds in the amount of $50,000.

What are the circumstances that require the initiation of planning at this site?

Colonel DIXON. Mr. Chairman, Redondo Beach Harbor was authorized in 1950. This is the first request for planning money and the $50,000 requested would allow us to get the planning in shape so we could go to construction when funds are appropriated for that purpose.

Redondo Beach is a small harbor on the California coast 18 miles northwest of Los Angeles. It is at present a small harbor where the local interests have built a breakwater. The project envisions a continuation and rehabilitation of the breakwater already constructed, and an additional breakwater to provide a safe, secure harbor for small craft.

The local contribution to the project is sizable. They have spent to date about $300,000 on their own breakwater, which has proven over the years to be entirely inadequate. They expect to spend in carrying out their responsibilitites under the authorization for Redondo Beach Harbor about $1,994,000. They will actually dredge out the harbor formed by these jetties that the Federal Government is required to build; they will build a wall; they will build certain piers and furnish lands. The harbor will provide a refuge for small craft. It will be a harbor for some 700 small vessels, including commercial fishing craft.

Mr. DAVIS. What is the relationship between this project and the serious problem at the Redondo Beach, which some of the members of this committee visited this past year?

Colonel DIXON. Yes, that problem is a very serious one. The jetties that we are planning on constructing will protect the harbor, and protect the area from the damaging effect of the high waves, and in addition, will furnish refuge for small craft. It will have a dual purpose.

Mr. DAVIS. Is there a separate project for the Redondo Beach itself or is that improvement of the situation there expected to come as a sort of byproduct of this harbor?

Colonel DIXON. It will come as a byproduct of the harbor development.

Mr. DAVIS. What will be required for additional planning of this project?

Colonel DIXON. While there is to be some detailed plans and specifications, this amount would allow us to put the planning in shape so we could start construction.

Mr. DAVIS. This is the first and last planning money that you anticipate requesting for this project; is that correct?

Colonel DIXON. That is correct.

Mr. HAND. What navigation benefits will be served here, Colonel?

Colonel DIXON. The navigation benefits will be principally the small craft, recreational craft.

RECREATIONAL BENEFITS

Mr. HAND. Recreational?

Colonel DIXON. And also a certain amount of commercial fishing.

Mr. HAND. Are you in a position to tell us the extent of the commercial fishing craft which could utilize and be benefited by this harbor as distinct from the recreational craft?

Colonel DIXON. A very small amount, relative to the number of vessels. In other words, we estimate this will handle approximately 700 small craft, of which say 10 percent will be fishing craft.

Mr. HAND. Essentially it is for recreational purposes?

Colonel DIXON. Essentially, that is correct.

Mr. HAND. In connection with what we might call a seashore resort?

Colonel DIXON. Yes; and also it is an area quite close, as you know, to the sizable city of Los Angeles. The recreational interests are high. Redondo Beach is accessible by trolley line, you might say, to Los Angeles and is well populated. It would be a place where the people of Los Angeles can find here a harbor for their small craft. They do not have an adequate harbor at the present time. Some reports I have

read indicate that as many as 60 small vessels have been damaged by being washed ashore. If the committee is interested, I have some photographs here showing the type of ocean waves we experience in that area. As I understand it, the committee has possibly seen some of them heretofore.

Mr. DAVIS. I do not believe either Mr. Cannon or Mr. Rabaut has seen them.

Colonel DIXON. This was a picture in Life magazine, the picture of the week, and shows the damaging effect of the ocean in this area.

Mr. HAND. Colonel, is it a little out of the ordinary to build a harbor of this character which has no commercial, or almost no commercial benefits, and serves only the recreational needs of the community and the surrounding community?

General CHORPENING. I would answer to this effect: that it has been somewhat out of the ordinary, particularly in recent years. However, harbors such as this have been built in the past, and there are many authorized.

You will recall, as Colonel Dixon has mentioned here, that the Federal project, basically, is to reconstruct one breakwater and to build another, and the local interests there will have to do the dredging. In fact, an inadequate breakwater has been provided and the local interests' contribution is estimated at some $1,900,000 to do that work.

BENEFIT-COST RATIO

Colonel DIXON. If I may state, the benefit-cost ratio of this particular project is 1.79. That was arrived at, without beach erosion benefits in view. In other words, we have the net return from fishing and recreational craft calculated out, and the elimination of vessel damage. We also had some $70,000 evaluated in the justification for protection of the existing seawall.

Mr. DAVIS. I think it boils down to this: Is this the best way you know of to protect that beach, where the beach erodes?

General CHORPENING. That is correct; we think that is the best way that we know of to really do that job.

Mr. CEDERBERG. General, does not this constitute somewhat of a new policy in that regard? I have been advised that harbors, as far as recreation is concerned, are out. If they are going to be in I will be over rapping on your door.

General CHORPENING. We have a dual problem here at this particular site. This is not a simon-pure, 100 percent proposition of providing a harbor for recreational craft. We had, in addition to that, the problem, where a beach, and a valuable beach, is being seriously eroded.

In this instance, we have brought out that the contribution which the local interests are to make is much greater than would normally be the case.

For many years we have, on the survey reports requested by the Congress, been reporting back favorable projects using what we call the small boat formula for benefits. This method has been accepted and the projects have been authorized. None have been built, in recent years, and there have been none started.

I think this is not a complete backing off of our policy of not building such harbors at this time, because it is tied with this very serious erosion situation.

Mr. CEDERBERG. I might say that on the Great Lakes we probably have more small craft that would use small harbors than any other place in the country. We have a real need for harbors up there to take care of those people, and some from the safety point of view, a harbor of refuge, where they can get out of the lakes. In addition to that we have got some real erosion problems along the Great Lakes. I can take you up there and show you some very valuable shore property that has been eroding at a terrific rate.

Now I have to admit, having been out there and looked at this situation, that it is not quite comparable to the lake-shore property, because we have a town itself involved there. But if we are going to start building recreational harbors I think we ought to think about not only California and its situation but the others around the country as well.

Mr. RABAUT. And do not forget to tell him about the small craft manufacturing in that area.

Mr. CEDERBERG. Yes.

Mr. DAVIS. I think the basic question here is whether or not this is a satisfactory method of protecting this critical beach situation, without the harbor, which is contemplated by this planning, and I think that is what it should hinge on, and I would like your comments with respect to that, General Chorpening.

General CHORPENING. I have not recently completely reviewed the survey report, but it is my understanding, and my impression from what I know about this project, and having seen it last year and discussed it, that there is no more economical means of providing protection than through the procedure that we are proposing here.

I might say, that I will review the testimony and look at that question again, and if I find anything further to report to the committee before the conclusions of these hearings I will do so.

Mr. DAVIS. We will appreciate that, because I think that is the determining factor.

KAWAIHAE HARBOR, T. H.

Mr. DAVIS. The third navigational project is for the Kawaihae Harbor, T. H., where we have a request for $50,000 allocated to planning, which appears to be the beginning and the end of the planning project. What can you tell us about that?

Colonel DIXON. Yes, Mr. Chairman. The Kawaihae Harbor was authorized in 1950. It is on the island of Hawaii, the main island of the Hawaiian group. Today there is this very small harbor, not suitable for deep-draft vessels. They are lightering out their products to larger ships in the nonprotected area.

This project envisions the construction of a 35-foot deep harbor and provides a breakwater and basin. The $50,000 will allow us to do sufficient planning so that we could go to construction in the following year. The total planning cost is approximately $77,200. This $50,000 will allow us to get to the point where we could complete detailed planning and start work on the project.

General CHORPENING. In other words, with this $50,000, we would be able to satisfy the review by the Bureau of the Budget; we would

know our costs, and we would have developed our design criteria. There would be a little additional planning to be done as the work of construction proceeds.

Mr. DAVIS. What is the benefit-cost ratio?

Colonel DIXON. The benefit-cost ratio of this project is 1.86.

Mr. HAND. Is this project to serve international shipping?

Colonel DIXON. It could handle that traffic, yes, and I presume that it would be international shipping. In other words, there is considerable sugar development on the island of Hawaii, and the indications are that there are similarly large pineapple possibilities for developments on the island. They could be shipped directly either to the canneries on Oahu, or direct to the mainland. The sugar would probably go to the mainland.

Mr. HAND. The harbor is designed to allow for that type of vessel?

Colonel DIXON. It would be a 35-foot depth harbor.

ILLINOIS WATERWAY, CALUMET-SAG CHANNEL, ILL.

Mr. DAVIS. The next project is the Illinois Waterway, Calumet-Sag Channel, where $40,000 is requested apparently to complete the planning. There have been rather sizable appropriations for planning in the past, and in the course of our discussions of the planning for this project last year, it appears that the decision was made to resume planning on this project after a lapse of some time, because of the necessity of this project in serving the steel industry in the Chicago area. Is that substantially a correct statement?

Colonel DIXON. This involved an item of steel for the reconstruction of these bridges. I believe it is true that a critical steel situation developed during consideration of the construction of this project. It is my understanding that the steel situation has considerably been relieved so that we could now go along with construction.

Mr. DAVIS. It was not to serve the steel industry, but because of the shortage of steel, for the number of bridges involved that caused you to defer the planning of this project?

Colonel DIXON. That is correct.

Mr. DAVIS. This $40,000 will complete the planning on that project?

Colonel DIXON. Not exactly. A project of this magnitude will require planning throughout its life, you might say. In other words, it is a project covering perhaps a 10-year construction period, and there would be a total cost of over $3 million for planning involved. But the money we are requesting would allow us to continue our planning on a reasonable basis including plans for enlarging the channel. It also involves negotiations with the railroads for the alteration of the bridges, which is one of the major items in this project.

Mr. DAVIS. This is simply a modernization and a deepening of the Calumet Canal there; is that correct?

Colonel DIXON. Widening of the canal, which is one of the principal requirements, because today it can handle only one-way traffic and is very much of a bottleneck in connecting the Inland Waterway system to the Great Lakes and Chicago. The benefit-cost ratio is 2.55.

Mr. CEDERBERG. I just want to say that I visited this project with the division engineer. I think it is a good project and has a lot of merit, and in the best interest of the entire country, so far as development is concerned.

MARKLAND LOCKS AND DAMS, INDIANA

Mr. DAVIS. The next is Markland locks and dams, where $50,000 is requested for planning. There has been about $379,500 planning funds previously appropriated for planning on this project. What is involved in this project?

Colonel DIXON. The Markland project is another replacement lock and dam, similar to others we have been discussing. This is on the Ohio River. It will replace five of the old locks on the Ohio, 35, 36, 37, 38, and 39, some of which were built as early as 1911. They are now in obsolete condition. They were designed to handle traffic principally down the river, small barges of coal. This is a modernization and replacement lock to be undertaken under the authorization of the 1909 act.

Mr. DAVIS. What is the state of planning schedule?

Colonel DIXON. It appears from a report we have from our field office that we will need, in addition to our request here, an additional $270,000 of planning funds before we would be ready to go ahead with construction.

General CHORPENING. This is a very large and expensive structure, and although this may appear to be a large cost that we are talking about here, it is not out of line with what should be expended before we go into construction.

Mr. DAVIS. You would expect to substantially complete the planning and be ready for construction as of what date?

Colonel DIXON. It would probably take an appropriation for an additional 2 years after 1955.

General CHORPENING. I think it is a function of how much overall planning funds we have available. If we should use more of the $2½ million, on this project, and we could actually use more, it would be at the expense of a few other projects, nationwide, that we should consider.

We do think we should continue to make some progress on this planning, because as we have testified earlier, we consider the replacement program on the Ohio River and on some of the other waterways to be quite important.

Mr. DAVIS. The $77 million, plus, Federal estimated cost is the same as was presented to the committee last year?

Colonel DIXON. The latest estimate submitted to the Congress, as I understand it, was $74,600,000. The present cost estimate, $77,112,000, represents an increase of about $2.5 million, which is brought about by price level changes.

General CHORPENING. At this stage in our planning, we are still removed from what we would consider a firm figure for cost estimate.

Mr. RABAUT. I notice that in most of these projects, regardless of what the total estimate for the Federal cost is, the planning amount is relatively alike, varying from $40,000 to $50,000, and $55,000, and in one case, $80,000. Is there not some relationship between the planning of these bigger projects and the planning of the smaller ones?

General CHORPENING. That goes back to my statement of a few moments ago, when I said that, of the total amount of the planning funds that are available to us, it becomes a problem of determining whether we should use that amount on these large projects to complete

planning, which would mean that our planning would be confined to relatively few projects.

Our aim is to carry along some planning on these large projects that we think should, at a fairly early time, be in the picture for construction, but also to provide some planning funds for smaller, and we consider well justified, projects, countrywide.

Now you will note that the only 2 projects that we had in the list of 8 on navigation, that will not be brought to where we can go into construction, are the Jackson lock and dam, and the Markland lock and dam. The others will be brought to the place where we could go into construction should that be desired and approved.

Mr. RABAUT. It seems to me, and I have no interest in this project we are talking about, the Illinois Waterway, but here is an item with a total estimated cost of $125 million, and to date we have spent about $2 million, roughly, and you have planning funds for this year of only $40,000, and at that rate for the planning of this project it would be held off indefinitely, although the cost-benefit ratio is 2.55 to 1.

General CHORPENING. Mr. Rabaut, we actually have brought our planning now to where we could go into construction on it, but we do feel, since there are no construction funds asked for this year, that a little more funds at his time to perfect some of our planning would be desirable. That is essential planning, which we need before we continue.

Mr. RILEY. Did I understand you to say, General, that it would take $270,000 additional to bring the Illinois Waterway up to the planned stage you would like?

Colonel DIXON. That was the Markland lock and dam. The $270,000 that I mentioned, of additional planning money, was for the Markland.

Mr. RILEY. Thank you.

GREENUP LOCKS AND DAM, KENTUCKY

Mr. DAVIS. The next project is the Greenup locks and dam on the Ohio River, where we have a request for planning funds in the amount of $50,000. There have been $370,800 allocated for planning in the past. This apparently is to complete the planning, substantially, for this project, $64,980,000 project. Have there been any developments here since the time of the testimony last year that should be called to the attention of the committee?

Colonel DIXON. No changes have been made in the basic project since our last discussion with the committee. Our estimated cost is still the same as we proposed last year.

Mr. DAVIS. This is another replacement of what you consider an obsolete structure on the Ohio River?

Colonel DIXON. That is correct.

PLAQUEMINE-MORGAN CITY ALTERNATE ROUTE, LOUISIANA

Mr. DAVIS. The next project is the Plaquemine-Morgan City alternate route with a request for planning funds of $80,000; previously allocated for planning, $201,500. The project estimated cost would be $24,350,000. This is substantially a new lock on the Intracoastal Waterway; is that correct?

Colonel DIXON. Not exactly, sir. This project provides an alternative route, you might say, from the Intracoastal Waterway to the Mississippi River in the vicinity of Baton Rouge. As traffic is now handled it goes from the Texas area through New Orleans and then up the Mississippi River. That is for the large tows. The small tows at stages less than 38 feet on the Mississippi River use this route for a certain distance by going through the Bayou Plaquemine lock. This new arrangement would permit the large tows to avoid congestion, and would result in saving 160 miles of travel up the Mississippi River to the vicinity of Baton Rouge.

INCREASED COST OF PROJECT

Mr. DAVIS. There is an increase in the estimated cost of this project of something over $3 million since last year; is that correct.

Colonel DIXON. The last estimate that we submitted to the Congress was the same as the estimate before you today, sir.

General CHORPENING. That is correct; it is the identical estimate as last year.

Mr. DAVIS. Last year the testimony was that all except about $2 million for this was for a lock.

Colonel DIXON. That is essentially correct. A new cut would have to be made, as you can see on the map attached to the planning report, which shows a land cut from the vicinity of Indian Village past Bayou Plaquemine up to and through Port Allen; that is a cut through fast land, a dredging job, which will cost a little over $2 million.

General CHORPENING. The funds herein requested would bring this project to a stage where we could go into construction.

Mr. DAVIS. How much did you actually allot for planning on this project for the current fiscal year?

Colonel DIXON. I think it was approximately $35,000, sir.

General CHORPENING. You will recall that last year before this committee we were testifying on a budget request of $3 million and as you know the final allowance was $1,900,000; and we had to make some adjustments in our proposed allocations.

Colonel DIXON. The $35,000 is the correct figure.

General CHORPENING. We did allocate that amount out of the planning funds made available to us.

Mr. DAVIS. You have me a little confused. You asked for $50,000 last year and evidently you were able to allocate $35,000 to it. And last year you told us that this will complete the plans so we can start the initial phase of construction. Now you are back with a request for $80,000 in order to do this job.

General CHORPENING. That is true. No doubt we could initiate some initial phases of construction. But we were only able to allocate $35,000 out of the $50,000 we defended last year. Since there is no request for construction we feel that, in order to be in better position to proceed with construction when and if desired, we should have the additional requested here, or $65,000 more than we contemplated last year. In other words, since there is some dredging involved in this project for which we have standard specifications and not too much planning would be required, we possibly could go into construction very promptly but, as far as the lock is concerned, we do think we should do some work on it prior to going into construction.

Mr. HAND. What is the benefit-cost ratio on this project?

General CHORPENING. 1.37 to 1.0.

Mr. HAND. 1.37.

General CHORPENING. Yes, sir.

Mr. HAND. You have the same type of authority, I assume, to allocate these funds back and forth to different projects regarding which there is testimony before the committee.

General CHORPENING. Yes, but keep in mind that we were defending this $50,000 last year on the basis of an overall request of $3 million, for advance planning; and we only received $1,900,000. In the conference report we were directed to spread that $1,900,000 over 35 projects, but we were not told the specific amounts; it was left to our judgment, and generally we have allocated it in the proportion of the overall cut in our request. The $35,000 allocation on this project would be about in that proportion.

HILDEBRAND LOCK AND DAM, WEST VIRGINIA

Mr. DAVIS. The final navigation project for which planning money is requested is on the Monongahela River where we have a request of $40,000; and there have been previous allocations of $117,000. Last year there was a request before the subcommittee of $45,000; and the statement was made that that would complete the plans to the point where you could initiate construction. Will you reconcile that with the $40,000 request at this time?

Colonel DIXON. In answer to that question, as General Chorpening explained, we could go into construction on certain excavation had money been set up this particular fiscal year for construction, but concurrently with that construction that was going on we would have to continue the designs and plans for the lock structure. This request would be applied to the design of structures.

Mr. RABAUT. Was the money spent that you got last year?

Colonel DIXON. The definite design study is complete, detailed construction plans and specifications are about 1 percent complete, and are expected to be 13 percent complete by June 30, 1954.

Mr. RABAUT. The general design work and the special design work was 1 percent with what you got last year.

Colonel DIXON. It is expected to be 13 percent at the end of this fiscal year.

General CHORPENING. It has a very high benefit-cost ratio: 1.8 to 1.

ADVANCE PLANNING, FLOOD-CONTROL PROJECTS

Mr. DAVIS. Now we turn to the advance planning for flood-control projects. I think we will first ask you to comment on Mr. Riley's suggestion with respect to the project. This completes the plans of those.

General CHORPENING. As previously stated, out of the $2.5 million being requested for advance engineering designs, $1,564,000 is being asked for for 30 flood-control projects. These 30 projects are actually in 23 different States.

For 14 of the 30, this year will be the first time funds have been requested. Sixteen have had some planning funds in earlier years.

Twelve out of the 30 projects are reservoirs, and 7 out of those will be brought to the point where we could go into construction with funds herein requested.

The other 18 are local protection and bank stabilization projects other than reservoirs, and 13 of these would be brought to the state where they could go into construction. That means that out of the total of 30, 20 would be brought to a state where we could go into construction with the funds herein requested. These projects included in the flood-control planning program are, it will be noted, generally rather small. Only 8 of the 30 have a total construction cost of over $15 million.

Mr. DAVIS. Can you identify those in which the fiscal year 1955 request represents the only planning requests?

Colonel STARBIRD. Yes, sir. The first is Hartford (Folly Brook), Conn. The others are South Beloit, Ill.; Matthews Canyon, Nev.; Pendleton, Oreg.; Spanish Fork, Utah; Greybull, Wyo., and Jackson Hole, Wyo. These are the projects for flood control for which the 1955 request is the total required to get them ready for construction.

PAINTED ROCK RESERVOIR, ARIZ.

Mr. DAVIS. The first project is Painted Rock Reservoir, Ariz. Last year in the hearings it was indicated that prior to the fiscal year 1954 you have already had $25,000 for planning. The justifications indicate that including last year that would be $304,000. We did allow that much last year?

Colonel STARBIRD. There was some misunderstanding there. In 1953 we allowed $164,000; in 1954 we allowed $140,000, bringing the total of that to $304,000 to date.

Colonel CHORPENING. That is corrected at the bottom of the page of the hearings of last year, in the last paragraph, Mr. Chairman.

Mr. DAVIS. That is correct. That was $140,000 previously allowed, and you allocated $164,000 in this year?

Colonel STARBIRD. $140,000 in this fiscal year.

Mr. DAVIS. Still it does not add up.

Colonel STARBIRD. I will have to check that and correct it, Mr. Chairman.

Mr. DAVIS. Will you check over the statement of the previous allocations to this project and how much you are going to spend overall?

Colonel STARBIRD. Yes.

Mr. DAVIS. And put a statement in the record.

(The information requested follows:)

In April 1953, at the time of the hearings on the 1954 budget, funds in the amount of $140,000 had been made available for planning on Painted Rock Reservoir as reported on page 291 of the House hearings, fiscal year 1954. The need of additional funds became apparent in the latter part of fiscal year 1953 and an additional amount of $24,000 was made available in June 1953, bringing the total to $164,000 for the fiscal year 1953. The amount allocated for fiscal year 1954 is $140,000, making the total allocation to date $304,000, which is expected to be essentially expended by the end of the current fiscal year.

TOTAL PLANNING COST FOR PROJECT

Mr. DAVIS. How much are you going to spend overall for planning on this project?

Colonel STARBIRD. The balance required prior to construction is approximately $230,000, and of that we are requesting $100,000 in 1955.

Mr. DAVIS. This project is being constructed as a result of a treaty that has been made between the United States and Mexico with respect to it; is that correct?

Colonel STARBIRD. There is a treaty that calls for the construction of works, both by Mexico and ourselves. This reservoir is one of the works to be constructed by the United States.

Mr. DAVIS. This involves flood control and irrigation?

Colonel STARBIRD. It involves flood control and siltation storage. The reservoir provides a reserve for siltation, in view of the fact that otherwise the silt would deposit in the main channel of the Colorado River with adverse effects there.

RUSSIAN RIVER RESERVOIR, CALIF.

Mr. DAVIS. The second of the flood-control projects is for the Russian River Reservoir, Calif., where we have before us a request for $150,000 for planning, and the previous allotments have been $326,000. How well along are you with this?

Colonel STARBIRD. That will bring us to the point where we can enter into construction, should we get the full $150,000 in the fiscal year 1955. When I say enter into construction of the project, you will note there are two elements of this project, a reservoir and channel improvement. We have been working so far primarily on the reservoir.

Mr. DAVIS. That is the Coyote?

Colonel STARBIRD. The Coyote, yes, sir. The project provides for the construction of one reservoir, the Coyote, and channel improvement.

SAN ANTONIO AND CHINO CREEKS, CALIF.

Mr. DAVIS. The next is the San Antonio and Chino Creeks in California where we have before us a request for $80,000. Previous allocations have been in the amount of $150,000. How far along will this bring this project?

Colonel STARBIRD. The request of $80,000 for the fiscal year 1955 will bring it to a point where we can initiate construction.

Mr. DAVIS. This is downstream from San Antonio Dam?

Colonel STARBIRD. This is downstream from San Antonio Dam and functions in conjunction with the San Antonio Dam.

SAN JOAQUIN RIVER AND TRIBUTARIES

Mr. DAVIS. The next is San Joaquin River and tributaries where there has been $351,200 previously allocated for planning, and we have before us a request for $40,000.

How far along will that bring the planning on this project?

Colonel STARBIRD. This $40,000 will bring it to a point where we can initiate construction on the first element as soon thereafter as construction funds are appropriated.

Mr. DAVIS. It looks like you fooled us somewhat. Last year the question was asked at the time the $25,000 was requested, "Does that represent the end of planning for this project?" To which Colonel Hiatt answered, "Yes. We plan to have it ready for construction in the fiscal year 1955."

Colonel STARBIRD. We did not intend to fool you, sir. In the reallocation of $1,900,00 we were unable to give any money to that project beyond that carried over from prior year funds.

Mr. DAVIS. You did not allot any money to this project.

Colonel STARBIRD. No, sir.

CHATFIELD RESERVOIR, COLO.

Mr. DAVIS. The next is the Chatfield Reservoir in Colorado. There have been no previous allocations for planning. This is a $31,350,000 project, and the request before us is for $50,000 to initiate planning.

How much are you going to require for planning here and over what period do you expect to construct it?

Colonel STARBIRD. It is a little difficult to forecast exactly before we get into the detailed design. We now estimate the amount needed to bring to construction status will be $350,000 and will be spread over several years.

Mr. DAVIS. What is the benefit to cost ratio?

Colonel STARBIRD. The benefit to cost ratio is 1.39 to 1.

Mr. DAVIS. On what river is it?

Colonel STARBIRD. This is on the South Platte River, directly above the city of Denver. It will function in coordination with Cherry Creek Reservoir, which is on a tributary, and in conjunction with certain existing local protection works in Denver. Also, it will give added protection to an extensive agricultural area along the river extending about 200 miles below Denver.

Mr. HAND. This initiates planning?

Colonel STARBIRD. This initiates planning on this project.

Mr. HAND. There has been no prior money on this?

Colonel STARBIRD. There has been no prior money on planning. We have, of course, completed the survey.

FOLLY BROOK, HARTFORD, CONN.

Mr. DAVIS. The next planning project under flood control is at Hartford, Conn., in the Folly Brook section. You have previously indicated this $25,000 is to initiate and complete planning on this project, which project is estimated to cost $292,900.

Tell us a little about that project.

Colonel STARBIRD. This project, authorized by the 1950 act, is an addition to the original project built at Hartford. At the lower end of the works now constructed a small brook, Folly Brook, enters the river. The existing structures, together with the reservoirs upstream, would give satisfactory protection against flooding, in the city of Hartford, except for the Folly Brook area. For these reservoirs in their entirety, it will be a long time before completion. Because of this, the city of Hartford has contributed to the cost of this project so as to provide a higher degree of protection.

This authorization would extend the levee slightly and put in a pressure conduit to carry the stream, Folly Brook, out to the river.

The project has a very high benefit-to-cost ratio of 5.6 to 1.

Mr. HAND. Do I understand this will not be needed after the completion of the project, and it is just a temporary expedient?

Colonel STARBIRD. It will be needed to provide protection to the Folly Brook area. At such time as we get the reservoir control, the overall levee built for Hartford could actually be at a lower elevation than as presently built and still furnish adequate protection, but local interests are paying for the additional height to secure the high degree of interim protection.

We have an unusual situation here where the local interests paid to bring the levee from that height planned in coordination with the reservoirs, up an average, I believe, of an additional 5 feet. This particular element on the lower end is to take care of the unprotected area. Here again, the local interests will take care of the additional height to fit in with the rest of the existing works. Otherwise existing works can be flanked by a flood approaching that against which the rest of the system is designed.

Mr. HAND. Then this money is not purely a temporary expedient?

Colonel STARBIRD. No, sir.

Mr. HAND. It will not be wasted, but it has a real relationship to the completion of the project?

Colonel STARBIRD. That is correct. My original statement gave you a wrong impression.

COLUMBIA RIVER LOCAL PROTECTION, IDAHO

Mr. DAVIS. Additional planning money is requested for local protection on the Columbia River which empties through a number of States in the Northwest. And we were previously informed, this is covered in 2 separate authorizations, but it is carried in the justifications as a $15-million project.

The request for planning funds is for $75,000 and it appears that $60,000 was allocated for planning from the 1954 current fiscal year funds. Those are justified as being to plan on the Portneuf and Marsh Creek sections of overall flood protection on the Columbia River.

Are we correct in assuming that allocations have been made to those two sections?

Colonel STARBIRD. We have actually made them to several locations. I would like to mention a little more about that authorization. The 1950 Columbia River authorization carried an item which authorized the construction of local protective works at approximately 35 different tributary locations, at a cost not to exceed $15 million, but with the proviso that none of those works would be undertaken until their benefit to cost had been reanalyzed and we had determined that they had a favorable benefit-to-cost ratio.

The funds received have been used to a large extent to determine whether or not certain projects had a favorable benefit-to-cost ratio. A portion of the 1954 funds was used for that purpose on the Weiser River, the Walla Walla River, Mill Creek, Wash., and the Teton River in Idaho. In addition to that, a portion was used on the Grande Ronde Valley unit in Oregon and the Portneuf River unit to do additional planning.

Mr. DAVIS. Marsh Creek did not get any allocation, then?

Colonel STARBIRD. No, sir; not separately. Marsh Creek is a part of the overall unit, Portneuf River and Marsh Creek, Idaho, and funds were allocated for planning to the overall unit.

Mr. DAVIS. Actually, those are a series of local protection projects?

Colonel STARBIRD. That is correct.

Mr. DAVIS. They all involve local contributions, do they?

Colonel STARBIRD. They do, sir.

Mr. DAVIS. Can you tell us a little bit as to specifically where you intend to apply the $75,000 requested?

Colonel STARBIRD. Yes, sir. Of the $75,000 we will apply $25,000 to further planning on one project that we have determined has a favorable benefit-cost ratio and to which we allocated $20,000 last year. That project is the Portneuf River and Marsh Creek project. That project has a benefit-cost ratio of about 1.14 to 1. It is a project for channel improvement through the city of Pocatello and other regions just above that are frequently flooded. Incidentally, with respect to the funds proposed for the Portneuf project, that amount will bring it to a status where construction can be undertaken.

In addition, we shall put $15,000 on the Teton River project, another project which we have determined has a favorable benefit-cost ratio and for which there is an immediate need.

The remainder of the sum we will use for further justification studies, in other words, for advanced planning for additional units that need to be justified before we can go into detailed planning.

Mr. HAND. On this whole series, there were no planning moneys sought or spent prior to fiscal 1954; is that correct?

Colonel STARBIRD. $60,000 in 1954 was the first appropriation.

SOUTH BELOIT, ILL.

Mr. DAVIS. The next planning request is for what might be called a one-shot planning project in South Beloit, Ill., on the Rock River. The total requested for planning is $10,000 on a project estimated to cost $117,100. Tell us about that.

Colonel STARBIRD. This is a small local protection project for the protection of a small city, South Beloit, which is just south of the Wisconsin line in Illinois on the Rock River and on a tributary of the Rock. The work will consist of a very low levee and a very low floodwall.

The project has a very high benefit-cost ratio of 5.1 to 1.

Local interests will contribute the normal assistance called for under the original 1936 act as amended, at an estimated cost to them of around $36,000, plus the cost of maintenance and operation.

SNY BASIN, ILL.

Mr. DAVIS. At the Sny Basin in Illinois there is a request for $60,000 for planning. There have been previous allocations of $518,700 for planning on a project estimated to cost $18,960,000.

How far along will the $60,000 take you?

Colonel STARBIRD. That $60,000 will bring us to construction status. We have completed, to all intents and purposes, the definite project report and layout plans. This amount is for the final work on plans and specifications required prior to construction.

Mr. DAVIS. Where is Sny Basin?

Colonel STARBIRD. Sny Basin is on the east bank of the Mississippi River approximately 100 miles above St. Louis. It is an area about 60 miles long along the river and consists of 125,000 acres.

Mr. DAVIS. What is the nature of the project, essentially?

Colonel STARBIRD. The project is one to improve the flood protection of the area. Local interests, assisted somewhat by the Federal Government, have put in the front line levee along the 60-mile expanse of the project. However, no provision was made prior to this present project for getting the internal drainage out, nor for getting out the drainage that came in from certain creeks in the highlands above the project. In other words, there were no intermediate flanking levees along tributary streams as there are at other places in connection with leveed areas along the Mississippi River. The creeks just poured down into the area. This project is one to conduct the creeks through the project and pump out the interior drainage water.

Mr. RABAUT. What is the cost-benefit ratio?

Colonel STARBIRD. The cost-benefit ratio is 1.75 to 1.

Mr. HAND. This is still a local project, but not quite as local as some of the other local ones?

Colonel STARBIRD. It is a rather extensive area. It is local in the sense that the protection is of a fixed area, but it contains 125,000 acres overall.

Mr. HAND. It has no specific significance? What is the population?

Colonel STARBIRD. It is an area with a population of around 6,500.

Mr. HAND. Is the total area designed to be protected?

Colonel STARBIRD. That is correct.

Mr. HAND. What is the nature of the land—agricultural?

Colonel STARBIRD. The land is agricultural.

Mr. HAND. What are they raising?

General ITSCHNER. Corn and small grains.

Mr. RABAUT. What do they do about this water from the creeks and higher land behind the levee now?

Colonel STARBIRD. Right now the major portion of the drainage just comes in behind the existing levees and finds its way by gravity across the area and on down to the river. There are some creek-beds——

Mr. RABAUT. Have they ever flooded?

Colonel STARBIRD. Oh, yes; they have frequent and heavy floods because when the river is high those streams cannot empty and when the flow from the highlands is greater than the streambed capacity, you have a flood.

Mr. RABAUT. You said there was formerly joint action on the part of the Federal Government and the local interests in establishing levees there.

Colonel STARBIRD. Yes, sir.

Mr. RABAUT. How much was spent at that time?

Colonel STARBIRD. The local interests spent approximately $2,375,000. The Federal Government at different times gave them assistance to the extent of about $903,000.

In connection with this further work also the local interests must provide the four normal assurances for which the estimated initial cost to them will be $1,688,000.

Mr. RABAUT. This project seems quite large for the amount of money spent on it originally.

Colonel STARBIRD. Yes, sir. But as I mentioned, it has only a front-line levee there. I did not mention that the bottom end of it has not been closed, so that there is a place at the south end where the backwater can come in.

Mr. HAND. Mr. Chairman, let me just comment that a quick calculation reveals the amount of money intended to be spent on this local protection project, based on a population of 6,000 is $3,166 per person and if we estimate an average of four persons per family in the home, it is $12,664 per family.

GREENFIELD BAYOU LEVEE, IND.

Mr. DAVIS. Now we come to Indiana, to the Greenfield Bayou Levee, where the total estimated cost is $1,118,000. We have before us a request for $20,000 for planning. Apparently there has been no previous allocation for planning at this place. Tell us about that project.

Colonel STARBIRD. This is a small local protection project to protect an area of about 11,370 acres of agricultural land on the Wabash River, on the east bank of the Wabash River at mile 190. Local interests have put in a measure of protection, but it is insufficient.

The project was authorized in 1946. It also has a very high benefit-to-cost ratio of 3.7 to 1. The local interests will contribute the four normal assurances at an estimated cost to them of $265,000.

The amount requested in 1955 will not bring us to a construction status. We estimate now it will require another $35,000 to bring this project to a construction status.

MANSFIELD RESERVOIR, IND.

Mr. DAVIS. Also in Indiana we have the Mansfield Reservoir, with a total estimated cost of $5,366,000. We have before us a request for $70,000 for planning. It appears there have been previous allocations for planning in the amount of $45,500.

Tell us something of the nature of this project.

Colonel STARBIRD. The Mansfield Reservoir is 1 of 2 reservoirs for flood control on the Wabash River. We have a situation on the Wabash River where there are very few reservoir sites. This reservoir has a total capacity of about 83,500 acre-feet. It is urgently needed. The reservoir is about 267 miles up the river from its confluence with the Ohio. We have, with the funds appropriated to date, brought the definite design studies to 37 percent completion and will complete them to the point of about 50 percent by June 30. If we get the full sum requested for fiscal 1955, it will bring us to a point where we can go into construction.

The project has a benefit-to-cost ratio of 1.4 to 1.

Mr. DAVIS. According to the testimony last year, your plans were to bring it to construction in fiscal year 1957.

Colonel STARBIRD. Actually this will be made ready for construction by 1956. I do not recall the amount requested last year.

Mr. DAVIS. You requested $30,000 last year.

Colonel STARBIRD. We are now requesting $70,000. We were able to put only $20,000 on it in 1954.

Mr. DAVIS. It is down along the Wabash on Racoon Creek?

Colonel STARBIRD. Yes, sir.

BUCKHORN RESERVOIR, KY.

Mr. DAVIS. Moving across the river into Kentucky, the next is Buckhorn Reservoir, which has an estimated cost of $6,618,000 and you are requesting $40,000 with which to initiate planning.

Tell us something about that project.

Colonel STARBIRD. This is 1 of 3 authorized reservoirs on the Kentucky River, none of which have been completed. Only one has received planning money and at the present moment, it appears that that project may be questionable as far as economic justification, so we have stopped spending planning money on it.

As you mentioned, this project has had no funds to date. We are recommending $40,000 in 1955 to initiate planning.

The project has a benefit-to-cost ratio of 1.3 to 1. In addition to serving as part of the comprehensive plan for the Kentucky River Valley it is also an element in the comprehensive plan for the Ohio River Basin.

Mr. DAVIS. It is on the Kentucky River?

Colonel STARBIRD. It is on the Middle Fork of the Kentucky River.

JACKSON, KY.

Mr. DAVIS. Also in Kentucky is the Jackson project which appears to be a local flood-control project estimated to cost $230,000. There have been $1,900 previously allocated for planning. We have before us a request for $12,000.

Colonel STARBIRD. This is a small cutoff of a rather large bend on the Kentucky River above Buckhorn. It is a project which has a benefit-to-cost ratio of 1.5 to 1 and the local interests are to take care of the normal assurances; although, because of the size of the Federal project and the distance that the cutoff has to cut through, their contribution will be in the neighborhood of $3,000 plus, of course, maintenance and operation after completion.

The project when completed will provide flood protection to the small city of Jackson, Ky., which does suffer from frequent floods and, on one recent occasion, had a very, very extensive flooding considering the city's size.

Mr. DAVIS. When was this $1,900 allocated?

Colonel STARBIRD. The initial planning allocation for this project was in 1946. The $1,900 represents the balance remaining after revocation of the major portion of those funds.

Mr. DAVIS. This completes the planning?

Colonel STARBIRD. This request for $12,000 brings the planning to the stage for initiation of construction.

Mr. HAND. Going back to Buckhorn, what is the general nature of the project and the general character of the area designed to be protected?

Colonel STARBIRD. The project is a concrete gravity dam with reservoir of 153,000 acre-foot capacity. It is a project for flood control primarily. There is to be 10,000 acre-feet in a permanent reservoir that will give you a slight amount of low-flow regulation.

The area concerned is largely agricultural and of small towns closely located to the Kentucky River from Buckhorn to the river's mouth.

Mr. HAND. The area to be protected is approximately what?

Colonel STARBIRD. I cannot give you the area. This is a reservoir project. We normally do not try to specify any exact area. I probably could get the acreage downstream from it both on the Kentucky and on the Ohio. However, as you realize, there is a decreasing degree of protection given to that area as you get farther and farther from the dam.

BUFFUMVILLE RESERVOIR, MASS.

Mr. DAVIS. In Massachusetts, we have the Buffumville Reservoir which has an estimated total cost of $2,566,000. The previous allocations for planning amounted to $114,700. We have before us a request for $25,000.

When were those previous allocations made?

Colonel STARBIRD. In 1945, $124,000; in 1948, $5,000; in 1951, $40,000, in 1952 we revoked a portion of the still available amount, around $54,000, and assigned it to other projects.

Mr. DAVIS. How far along will the $25,000 bring the planning in this case?

Colonel STARBIRD. The $25,000 will not bring us to a construction status. We will need about $54,000 more to bring us to a construction status.

Mr. DAVIS. What is the nature of this project?

Colonel STARBIRD. The project is a reservoir primarily for flood control with a very small conservation permanent pool. It is 1 of the 7 reservoirs in the Thames River comprehensive plan. It is actually on Little River, which is a tributary of the Thames River. The dam itself is about 70 miles above the city of New London where the river empties into Long Island Sound.

Mr. DAVIS. What is the benefit-to-cost ratio?

Colonel STARBIRD. The benefit-to-cost ratio is 1.5 to 1.

Mr. DAVIS. You would anticipate getting the planning completed about when?

Colonel STARBIRD. We could complete planning either in 1956 or 1957.

POMME DE TERRE RESERVOIR, MO.

Mr. DAVIS. The final planning project for this afternoon is the Pomme de Terre Reservoir in Missouri, which has a total estimated Federal cost of $22,446,000. There have been previous allocations for planning in the amount of $529,500. We have before us a request for $15,000.

Tell us how far along this will bring the planning and give us a statement as to the nature of this project.

Colonel STARBIRD. The $15,000 would bring us substantially to a construction status, affecting certain refinements in plans and specifications in the manner General Chorpening mentioned earlier for another project.

This project is a reservoir project of about 650,000 acre-feet. It is a key unit of the Osage Basin comprehensive flood-protection plan and is actually located on the Pomme de Terre River, which is a south branch tributary of the Osage River. This river has a record of very

frequent flooding and some quite serious flooding. For instance, the city just below the reservoir has been flooded to a varying extent 58 times in 32 years.

Mr. DAVIS. What is the benefit-to-cost ratio?

Colonel STARBIRD. The benefit-to-cost ratio is 1.29 to 1.

Mr. DAVIS. Essentially what would be protected?

Colonel STARBIRD. It will give protection, first, to the city of Hermitage, which is downstream from the dam. However, that is a very small part of its total benefits. It will give a protection to an acreage along the Pomme de Terre River and a measure of protection to the acreage along the Osage River and to the lower Missouri and Mississippi acreage. It is a part of the comprehensive flood-protection plan for the Missouri River Basin.

Incidentally, it also gives protection to a dam downstream, the Bagnell Dam which was badly threatened in the flood of 1943 and certain emergency measures had to be taken to save that dam and maintain continuous power output.

WEDNESDAY, JANUARY 27, 1954.

BILLINGS, MONT.

Mr. DAVIS. The subcommittee will resume its hearing with the flood-control project at Billings, Mont., where we have a request for $25,000 for planning on a project estimated to cost $3,665,600. It appears that no prior allocations for planning at this site have been made.

Colonel Starbird, will you give us something of the nature of this project and what it is contemplated to do with respect to the planning and construction of it?

Colonel STARBIRD. Yes. Billings, Mont., is a city of about 40,000 population, on the Yellowstone River at mile 346 above its confluence with the Missouri.

The project was authorized in 1950. The floodwaters come into the city periodically from three directions: first from the Yellowstone River; second, from small tributaries passing through the city and entering the river from the west; third, from an escarpment north of the city.

The project is recommended to give protection from all three types of flooding.

We have had, as you mentioned earlier, Mr. Chairman, no planning appropriation to date. We recommend $25,000 in 1955 to initiate and carry to partial completion a definite design study. This will not complete the preconstruction planning required. Approximately 1 more year with somewhere about the same amount would be required to bring the project to construction status. With this work, when completed, we would give substantial degree of protection against floods of all three types that I mentioned earlier.

LOCAL CONTRIBUTIONS

Mr. DAVIS. There is substantial local contribution here?

Colonel STARBIRD. There is substantial local contribution here, in the form of the four normal forms of cooperation.

It has an estimated cost to local interests of $291,900 and we have received informal assurances from the local interests that they will provide the necessary cooperation.

Mr. DAVIS. What is the cost-benefit ratio?

Colonel STARBIRD. 1.35 to 1.

MATTHEWS CANYON RESERVOIR, NEV.

Mr. DAVIS. Next is the Matthews Canyon Reservoir in Nevada, with an estimated Federal cost of $755,000. The request before us is for planning funds. There have been no previous allotments for planning, but I believe that General Chorpening indicated that the $40,000 would complete as well as begin the planning; is that correct?

Colonel STARBIRD. That is correct.

Mr. DAVIS. Will you tell us about this project, Colonel?

Colonel STARBIRD. Yes. This is one of two small reservoirs authorized on the headwaters of Meadow Valley Wash. This stream flows into Lake Mead, the lake back of Hoover Dam.

There is a rather extensive, although limited total area of development to the narrow riverbed, development for irrigation, agriculture. Also there are several small towns, including the city of Caliente, with a population of about 2,000 people. This reservoir in conjunction with the other small reservoir will give protection to this area, and the small cities located along the river.

The project is a reservoir that can retain something over 6,000 acre-feet. No funds, as you mentioned, have been appropriated. The $40,000 requested for 1955 will bring the project to construction status.

The benefit-cost ratio of the project is 1.32 to 1.

Mr. DAVIS. Is that the benefit-cost ratio for this one project?

Colonel STARBIRD. That is the benefit-cost ratio of the comprehensive project. There are two reservoirs which provide flood protection in this area. They are designed to function in coordination with each other. This reservoir will give some protection, but the two are needed to function together to give the substantial degree of protection to the area that I mentioned.

Mr. DAVIS. What is the status of the Pine Canyon project?

Colonel STARBIRD. Pine Canyon has an estimated cost at the present time of $1,450,000. It was authorized by the same document as the dam just mentioned. There has been no advance engineering and design work accomplished on this project.

Mr. DAVIS. Will you give us a statement concerning the benefits? There will be substantial benefits from the result of this construction?

Colonel STARBIRD. There will be substantial benefits.

Mr. DAVIS. A plan is designed to give protection to the transcontinental railroad.

Colonel STARBIRD. There is a transcontinental railroad, which has been interrupted in the past. There are also certain county highways which have been interrupted in the past.

CHAMITA RESERVOIR, N. MEX.

Mr. DAVIS. We will take up next the Chamita Reservoir, N. Mex., with an estimated Federal cost of $26,715,000. We have before us a request for planning funds in the amount of $175,000. There have

been previous allotments for planning of $455,000. I notice that last year this reservoir was estimated to cost $36 million and this year $26 million, plus. Does that indicate a change in the project?

Colonel STARBIRD. It indicates a change in this sense: As mentioned last year in the testimony, we were considering at that time putting in 2 reservoirs in place of 1 which we had originally planned to build. We have now come to the conclusion that the decision to do that would be sound. The 2 reservoirs will have approximately the same usable flood control capacity as the original 1, and affords a better solution than the single reservoir. The net saving we estimate at this time would be in the neighborhood of $10 million, as you have already brought out.

Mr. DAVIS. This reservoir, instead of being the Chamita Reservoir, is really two related projects of operation?

Colonel STARBIRD. There are two related reservoirs. Chamita is roughly at the site of the originally planned reservoir, but it is substantially smaller, in the order of magnitude of about one-third. The balance of the storage, the other two-thirds, that originally was planned for Chamita will be put in another reservoir, at a better site, approximately 20 miles up the river.

Mr. DAVIS. This planning is to continue with the details on the one, or is it plans for both reservoirs?

Colonel STARBIRD. This planning is for both reservoirs, although the funds that we are now spending, the major part of the funds for the fiscal year 1955 allocation, will be spent at Abiquiu; the upper site.

Mr. DAVIS. How far apart are they?

Colonel STARBIRD. They are about 20 miles apart.

Mr. DAVIS. What kind of protection is given?

Colonel STARBIRD. This reservoir will provide protection to a critical and vital area, and is an essential part of the Rio Grande system.

There are authorized at the present time 2 reservoirs, and 1 of the reservoirs is the Jemez Canyon Reservoir, which is complete and is located very close to Albuquerque. It is a part of the system of the reservoirs which we have been discussing.

The other is on the Rio Chama. The Rio Chama is a river that joins the Rio Grande at Espanola. The Rio Chama is a principal contributor of the floodwaters and silt into the upper Rio Grande.

The protection which we are giving is to the limited development of agricultural area along the Rio Chama, the city of Espanola, and other important areas on the downstream reaches, particularly in the vicinity of Albuquerque, where we are planning local protection works to function in combination with the upstream reservoirs.

Mr. DAVIS. You are getting quite a bit of local cooperation for this project?

Colonel STARBIRD. Not at this particular project; we are getting local cooperation on floodways downstream. We are getting quite a bit of favorable contribution in connection with the Albuquerque unit, which we discussed previously and at which time I mentioned the size of the contribution.

Mr. DAVIS. How far is this river above the city of Albuquerque?

Colonel STARBIRD. The Rio Chama joins the Rio Grande about 100 miles above the city of Albuquerque.

Mr. DAVIS. Are your plans definite with respect to the site and construction of the reservoir?

Colonel STARBIRD. Yes, sir. The answer to your question is that we need a reservoir at the Abiquiu site and studies thus far made indicate we are very close to the size project that should be built at this location. In other words, further planning will not change appreciably the size of the reservoir now proposed there.

At the present time we believe we need the second reservoir of the Rio Chama system at the Chamita site.

Mr. DAVIS. How did this project stand so far as authorization is concerned?

Colonel STARBIRD. We have authorization for the Chamita Reservoir.

At the time consideration is given to some new authorization bill we will present the fact that Chamita is the wording used, and will report exactly what we are now doing in the way of planning.

It will be noted, in this particular case that the funds we are requesting here are for planning, not for construction. Also, this represents a better solution for the same problem, a better solution and at the same time, it results in a saving of around $10 million.

ALLEGHENY RIVER RESERVOIR, PA. AND N. Y.

Mr. DAVIS. The Allegheny River Reservoir, Pa. and N. Y., has a total estimated cost of $87,260,000. We have before us a request for planning funds in the amount of $50,000, and there have been previous allocations to planning on this project of $116,500. What is the consideration that led to the request for the additional planning funds in this fiscal year?

Colonel STARBIRD. We wish to carry on the planning. We have been carrying work on the planning for rather an extended period, because this is a fairly large reservoir above the city of Pittsburgh and above the city of Warren.

The amount requested will permit us to continue planning for this project. It will not bring us to a construction status. We will still require substantial additional sums to complete the planning required prior to construction.

Mr. DAVIS. What is the present plan to get this project ready for construction, at about what time?

Colonel STARBIRD. Approximately 1959, fiscal year.

Mr. RILEY. You mean you can complete it in 1959?

Colonel STARBIRD. No, sir, that would be when we would initiate construction. As I mentioned, we have a substantial amount of additional planning yet to do. With the money currently available, we shall bring the definite design studies to about 27 percent of completion. We must go on with additional planning through approximately the 1958 fiscal year.

Mr. RILEY. Would an increase in appropriations speed that project work up?

Colonel STARBIRD. An increased appropriation would speed it up some. I rather doubt if we could, for example, complete all of the remaining planning in 1 year.

Mr. RILEY. This is a rather critical area up in the States of Pennsylvania and New York.

Colonel STARBIRD. Yes; it is a key unit in the reservoir system for the protection of the Allegheny Valley and a part of the overall Ohio

comprehensive system. For example, this reservoir, when completed, would reduce the height of the design flood about 2.7 feet at Pittsburgh.

Mr. RILEY. What about Warren? Has it not suffered some rather disastrous floods during the past 2 or 3 years?

Colonel STARBIRD. I do not have the exact locations of the floods, but there was a major flood on the river in 1952. The benefits creditable to this project from the standpoint of flood damages which would have been prevented in the 1952 flood would be in the neighborhood of $3.5 million had it been in operation under the system plan.

Mr. DAVIS. What is the benefit-cost ratio on the project?

Colonel STARBIRD. The benefit-cost ratio is 1.26 to 1.

DAVENPORT RESERVOIR, N. Y.

Mr. DAVIS. Also in New York, the Davenport Reservoir, with a total estimated cost of $11,045,000. We have before us a request for $50,000 for planning, and there appears to have been allocated for planning in the past a total of $284,400. How far along are you with the planning work, Colonel?

Colonel STARBIRD. This money will bring us to a point where we could initiate construction at such time as construction funds are appropriated.

Mr. DAVIS. What is this project designed to do?

Colonel STARBIRD. This project is designed to be a part of the overall comprehensive system for the lower New York and eastern Pennsylvania area on the Susquehanna.

There are 7 authorized reservoirs above the city of Binghamton, the first major location where we have put in major local protective works and which was designed on the basis of getting upstream the degree of protection that would be provided by the 7 reservoirs. Two of the seven reservoirs have been completed.

Mr. DAVIS. This is the only 1 of the 7 in the system where planning funds are being requested?

Colonel STARBIRD. It is the only one where funds are being requested this year.

WELLSVILLE, N. Y.

Mr. DAVIS. The third of the New York projects is Wellsville, a project with an estimated cost of $918,000. We have before us a request for $26,000, and there have been previous allocations for planning in the amount of $38,000.

How far along will the $26,000 bring the plans toward completion?

Colonel STARBIRD. The $26,000 will bring us to construction status.

Mr. DAVIS. What is the benefit-cost ratio?

Colonel STARBIRD. 1.38 to 1.

Mr. DAVIS. What is it designed to protect?

Colonel STARBIRD. It is designed to protect an area along the Genesee River. The area is primarily that of Wellsville proper and its suburbs. Wellsville has had a record of frequent and in several cases very damaging floods.

Mr. HAND. Distinguish for me the other two projects in New York—I understand this is a local protection project.

Colonel STARBIRD. Yes, this is a local protection project.

Mr. HAND. I wonder if you will give us the benefit-cost ratio on the Davenport project?

Colonel STARBIRD. Yes, the benefit-cost ratio is 2.04 to 1.

PENDLETON, OREG.

Mr. DAVIS. The next project is Pendleton, Oreg., with a Federal estimated cost of $607,000. We have before us a request for $15,000 for planning. There have been no previous allocations for planning, but I believe that General Chorpening informed us yesterday that the $15,000 would be the one and only planning request for this project. Will you tell us about it, Colonel?

Colonel STARBIRD. Yes. The funds will bring us to the construction status. Do you wish a description of it?

Mr. DAVIS. Yes.

Colonel STARBIRD. This is a small local protection project for the city of Pendleton with a population of 12,000. It consists of raising and improving certain levees, but primarily channel improvement and revetment of the channel. The project was authorized in the Flood Control Act of 1950.

There is the normal local cooperation required, the four assurances. The estimated cost of that part that the local interests will provide amounts to $51,500, plus an estimated $6,400 annually for maintenance and operation.

Incidentally, the sum mentioned includes a $15,000 cash contribution.

The project has a good benefit-ratio of 1.6 to 1.

The project, when completed, will eliminate 97 percent of the annual flood damage. The area has had a record of frequent flood damage. It is estimated that a major levee failure might cause damage in the neighborhood of $5 million.

Mr. DAVIS. This is on the Umatilla River, a tributary of the Columbia?

Colonel STARBIRD. That is right. At mile 50, roughly, on the Umatilla River.

BRADFORD, PA.

Mr. DAVIS. In Pennsylvania, the Bradford project, has an estimated cost of $8,492,000. We have before us a request of $80,000 for planning. There have been previous allocations for planning in the amount of $64,000. To what status will this planning fund bring the project, Colonel?

Colonel STARBIRD. This $80,000 would bring the project to construction status. I might mention, incidentally, that this will bring to construction status the full length of the project. This again is primarily channel improvement. We had originally intended last year to bring only approximately one-half of the project to construction status with the funds we requested at that time. Now it appears it is desirable to bring it to construction status for its overall length.

Mr. DAVIS. This appears to have a benefit-cost ratio of 1.1 to 1. That is getting down pretty close to unity. Are there other projects that are dependent upon this one?

Colonel STARBIRD. No, sir; this is a local protection project. It is a project that is badly needed, and happens to be a project where the local interests have, on their own, done a great deal of work.

When we originally investigated this project for Bradford, which, incidentally, is a city which lies along an extended reach of the river in comparison with the width of the city, we found that we would have liked to provide a greater degree of protection than the economics would justify. A project with reduced protection was selected as being that which could be justified, however, it provides protection against greater than the flood of record.

That explains why the benefit-cost ratio is relatively low.

I would like to reemphasize, if I may, that this is a case where the local interests are going to do a great deal and have done a great deal already to try to protect themselves. They have spent about $900,000 during the period we were developing the plans, which is work the Federal Government otherwise would have had to do. They will contribute overall to the extent of about $3 million worth of work in cooperating in the construction of the project.

I would like to mention also that there is a record of very frequent and damaging floods in the area of this particular project.

Mr. HAND. It is on the Allegheny?

Colonel STARBIRD. It is on a tributary, Tunungwant Creek, of the Allegheny River.

Mr. CEDERBERG. At this project, Colonel, you mentioned that the local interests have paid around $900,000, which the Federal Government normally would have taken care of; is that correct?

Colonel STARBIRD. That is correct.

Mr. CEDERBERG. In other words, if you are going to base the cost-benefit ratio on this project the same way you do on other projects, with the $900,000 that would be included, you could not even get a 1 to 1 benefit, could you?

Colonel STARBIRD. In this case, as with all other projects, consideration was given, in the study, to the total work needed to be done. The total cost is considered, not only the Federal cost, but the local as well.

Mr. CEDERBERG. That is in the cost-benefit ratio?

Colonel STARBIRD. That is correct.

WOONSOCKET, R. I.

Mr. DAVIS. The Woonsocket, R. I., project has an estimated cost of $1,826,000. We have before us a request for $30,000 for planning funds, and there appears to have been no previous allocations for planning. What is the need for this project, and what is the schedule for completion which you have in mind?

Colonel STARBIRD. Sir, the project is a local protection project for the city of Woonsocket, R. I.

The project consists of channel improvement over a reach of approximately 1.2 miles, and the replacement of an existing dam at the bottom of that reach, which has a relatively high sill, causing the water to back up along the river.

In the modification, the sill would be lowered by about 6 feet and gates will be put in.

The project has an estimated cost of $1,826,000; local interests will provide the normal cooperation, and the estimated cost to them is something over $156,000.

The project has a benefit-cost ratio of 1.4 to 1. Approximately $100,000 additional planning funds will be required to bring the project to construction status.

SPANISH FORK RIVER, UTAH

Mr. DAVIS. The Spanish Fork River, Utah, a project with an estimated cost of $219,000, and we have before us a request for $16,000, which as has been indicated, will begin and complete the necessary planning. Will you tell us about that?

Colonel STARBIRD. The Spanish Fork project is a project largely to protect the agricultural area along the lower reaches of the Spanish Fork River, the river which runs into Utah Lake, about 50 miles southwest of Salt Lake City.

It will also give benefit to 4 railroad crossings and 2 highway crossings along the area concerned.

The project is basically one of channel improvement and very low levees along the lower 12 miles reaches of the river, together with modification of certain existing structures that are in the channel proper.

Local interests will take care of the normal assurances at an estimated cost to them of $80,000.

The project has a benefit-cost ratio of 3.1 to 1.

This is another area that has a record of fairly large floods. In the last few years, in addition to the periodic floods, there was one very large flood in the area.

Mr. DAVIS. I notice at the time this was authorized, in 1946, the cost estimate was under $75,000. Now it is up to approximately three times that amount.

Colonel STARBIRD. The 1946 esimate was based on a 1940 price base. In other words, the $74,000 was based on the 1940 prices. There have been no structural changes made in the project since the time it was originally authorized.

COLFAX, WASH.

Mr. DAVIS. In Washington, the Colfax flood-control project, has an estimated cost of $2,361,000. The request before us is for $25,000 for planning funds, and the previous allocations have been $73,900 for planning.

I do not believe there was any planning funds requested last year.

Colonel STARBIRD. None have been granted since 1950.

Mr. DAVIS. What are the considerations that led to the reactivation of the planning at this time, or have you been planning continuously with previous funds?

Colonel STARBIRD. We have been planning since 1950 with some of the funds. We actually made plans I believe until 1952, and have been continuing the normal observations and general review since that time.

This project is one which lies through a major portion of the small city of Colfax. That city had a very serious flood in 1948, and has had two small or limited floods since that time. It is believed that the planning on this should be brought along so that construction can be initiated on the project at a relatively early date.

The project has a benefit-to-cost ratio of 1.32 to 1.

Mr. DAVIS. In 1944 this project was estimated to cost $290,000. Now it is about 8 or 9 times that amount. Can you explain that?

Colonel STARBIRD. Yes, sir; I can explain it.

Subsequent to authorization, the very heavy flood I mentioned in 1948 occurred. It was found that the design capacity should be changed. A substantial increase was made in the design capacity on both the Palouse and the South Palouse River channels, which flow through the city, and of the short stretch of the river below their confluence, also in the city.

Furthermore, we have changed our standards of design somewhat in the degree of protection we are to give the bottom of the channel, and the side slopes of the channel whereby we will put in concrete and asphaltic material in places where, originally, a lesser degree of protection was contemplated through use, primarily, of riprap. The change in scope resulted to a large extent because of the high velocities that have been revealed as possible, but there has been no change in the area to be protected since the original plan was recommended and approved.

Mr. DAVIS. If the Public Works Committee is paying as close attention as I hope it is to the magnitude of the backlog of projects at this time that is being built up, I think it would be very much interested in being informed that a project that has multiplied in cost some eight to nine times. Has the committee been informed in any way with respect to the increase in costs before proceeding with the plans for construction?

Colonel STARBIRD. As far as I know they have not been told of this change.

EAGLE GORGE RESERVOIR, WASH.

Mr. DAVIS. The Eagle Gorge Reservoir has an estimated cost of $19,855,300. We have before us a request for $170,000 for planning, and I notice the previous allocations have totaled $301,200. How far along will the amount bring the planning on this project?

Colonel STARBIRD. That will bring the planning on the railroad relocation, and also on the main dam, to a point where we can initiate construction on both.

Mr. DAVIS. What is this project designed to protect?

Colonel STARBIRD. This project is a moderate-sized reservoir for flood protection and for water conservation. Insofar as water conservation is concerned, local interests are required to pay $2 million in cash contribution toward the project. As far as protection is concerned, it is located on the Green River approximately 30 miles above the city of Seattle, and the Green River flows through a large part of the city of Seattle. It gives protection to agricultural areas and the communities between the dam and Seattle. In addition, it protects a large part of the heavy industry of the Seattle area.

There are approximately 17,000 acres of land in the area subject to flood damage below the reservoir.

Mr. DAVIS. The benefit-to-cost ratio is what?

Colonel STARBIRD. The benefit-to-cost ratio is 1.27 to 1.

GREYBULL, WYO.

Mr. DAVIS. In Wyoming, you have funds requested for planning for two projects. One of them is at Greybull, where the project is estimated to cost $714,000. We have requests for $40,000 to begin and complete planning on this project, as I understand.

Tell us about it, please.

Colonel STARBIRD. This is a small local protection, primarily a levee, project. The project is one of constructing a relatively low levee along the river front of the city. The city is located on the Big Horn River about 183 miles above its confluence with the Yellowstone River.

This request, as you mention, will bring the project to a construction status.

In this case, also, local interests are required to provide the normal four elements of cooperation. The estimated cost to them is $64,900. The project has a benefit-to-cost ratio of 2.18 to 1.

JACKSON HOLE, WYO.

Mr. DAVIS. Also in Wyoming is the Jackson Hole project at an estimated cost of $1,915,000. We have before us a request for $50,000 to begin and complete the planning.

Tell us about that project.

Colonel STARBIRD. This project consists of improvement by construction of levees primarily on the west bank of the upper Snake River, almost at the headwaters of that river. There is a short section also on the east bank.

The area concerned which would be given a measure of protection by this project is one of a length of around 12 miles and within that length lies the small community of Wilson, which has been threatened and flooded repeatedly in recent years.

I mentioned the project was improvement through construction of levees. I should go on to say that it is also necessary to revet the levee and provide certain bank stabilization measures along the stretch that is being improved by the levee.

The project has a benefit-to-cost ratio of 1.8 to 1. Local interests here again will handle the normal assurances. The cost to them is estimated at $14,000 initially and $14,000 annually hereafter for maintenance and operation.

I might mention also that they have already done a good deal of work here. This is an area, incidentally, where we are called in frequently under our emergency authority to repair inadequate works that have been damaged.

ADVANCE ENGINEERING AND DESIGN FOR MULTIPLE-PURPOSE PROJECTS

Mr. DAVIS. We will turn now to "Advance engineering and design for multiple-purpose projects."

I will ask you, Colonel Whipple, to give us in general, the same type of information for planning on these projects as was given generally with respect to navigation and flood-control projects.

Colonel WHIPPLE. Of the $2,500,000 requested for advance engineering and design, $521,000 will go to 7 multiple-purpose projects.

All of these projects have had prior planning money. The requested funds will go to bring 6 of the 7 projects to a stage where they can go to construction when Congress appropriates the necessary construction funds.

I might add that these are all large and complex projects and the planning activities on them are also quite complex.

Mr. DAVIS. Which of the seven will not be ready for construction with this planning money?

Colonel WHIPPLE. The Libby project.

FORT GAINES LOCK AND DAM, ALABAMA

Mr. DAVIS. Proceeding with the first of the projects, Fort Gaines lock and dam in Alabama, we have before us a request for $20,000 for planning. There have been previous allotments for planning in the amount of $532,100. The total estimated cost is $82,793,000.

We had considerable discussion with respect to this project last year when it was presented to the subcommittee and at that time it was explained that the construction of this dam, at least in its present form, did represent a substantial change in the overall series of projects on the Chattahoochee River. As your planning has proceeded, has it confirmed your judgment in the alterations in the overall planning and design on this series of projects?

Colonel WHIPPLE. Yes, sir, it has. The change from the upper Columbia and Fort Benning Dams to a combination of the Fort Gaines and Columbia Dams, putting a larger dam with a greater storage and the hydroelectric power plant at Fort Gaines, rather than at the upper Columbia site, has been confirmed.

Mr. DAVIS. The planning has reached a point now so that you feel you are on a sound footing foundationwise at this site?

Colonel WHIPPLE. Yes, sir, that is correct.

Mr. DAVIS. I believe last year, in accordance with this discussion, we did suggest that the corps present this matter to the Public Works Committee and that was done and they did approve the change in the overall plans on the Chattahoochee?

Colonel WHIPPLE. Yes, sir.

Mr. RILEY. Give us the benefit-to-cost ratio in each one of these projects.

Colonel WHIPPLE. The benefit-to-cost ratio is computed on the system basis for the 4 dams and is 1.16 to 1. It includes the Jim Woodruff and Buford Dams, which were discussed for construction, as well as the Columbia Dam.

Mr. DAVIS. You feel it is impracticable to assign a benefit-to-cost ratio for this project alone?

Colonel WHIPPLE. Yes, sir, it is impracticable and it has not been attempted.

HARTWELL RESERVOIR, GA. AND S. C.

Mr. DAVIS. In Georgia and South Carolina we have a project known as the Hartwell Reservoir with an estimated total cost of $90,637,000. There have been previous allocations for planning in the amount of $815,600. We have before us a request for $50,000 to complete the planning.

Last year there was testimony to the effect that the planning funds requested at that time would complete the plans to a stage where you could start construction. However, it was indicated there might be some additional work required on the detailed design of the powerhouse and equipment.

Generally is that the purpose of the funds now requested?

Colonel WHIPPLE. Yes, that is correct. We do have detailed plans and in fact contract plans and specifications for the embankment section of the dam which we could start work on. However, we did not receive quite all of the funds we requested last year. We were able to allocate $100,000 instead of the $130,000 contemplated. And this additional $50,000 we are requesting is to continue studies on the concrete dam and powerhouse relocations, development of the concrete aggregate sources, with a view of having the plans completed for the concrete dam and turbines for which, of course, we would have to award a contract at an early date following receipt of a construction appropriation. The embankment is only a minor portion of the project and although you could start construction with that embankment, we feel it would be desirable to have detailed studies made of some of the other more important features as well.

Mr. RILEY. How much more money do you estimate it will take to bring this project up to a point where it would be on a soundly planned basis?

Colonel WHIPPLE. We would like to have this additional $50,000. I believe after the receipt of these funds the project could be set aside as having been adequately planned for the purpose of starting construction.

We can, of course, start construction even prior to that time on certain features of the project.

Mr. RILEY. Would the additional planning money enable you to complete other plans, or could those plans be designed as you go along just as well as prior to beginning construction?

Colonel WHIPPLE. Generally speaking, on a project of this magnitude we have to have a fairly large engineering staff to carry on the planning. If there is a hiatus, say, of 1 year between the planning phase and the time the project is initiated, the personnel concerned may be dispersed and it will be necessary to recruit again at that time. So we do like to continue the planning where we feel there is a reasonable chance of starting the project at an early date.

Mr. RILEY. You could start this project at any time and you could start these other five at any time; is that right?

Colonel WHIPPLE. That is substantially correct. We will be ready to start any of them by fiscal 1956. On this particular project we could even start construction this year, as was testified in last year's hearing; but it is desirable to continue planning studies for 1 more year in order to more fully develop these plans for some of the more important features of the project.

FORT PECK, MONT. (SECOND POWERPLANT)

Mr. DAVIS. In Montana we have a request for $220,000 for continuation and completion of planning on the second powerplant at Fort Peck. I note your estimate of cost since last year has gone up to $1,671,500. Is that purely a cost increase in the estimate?

Colonel WHIPPLE. That increase is due to the general price increases since that time. In fact, it is somewhat less than the general price increase. It has been somewhat offset by refinements based on the progress of the planning.

This project, as you know, has one powerhouse already in operation. This is to provide the additional powerhouse in accordance with the developing power market in this area.

LIBBY RESERVOIR, MONT.

Mr. DAVIS. The second Montana project is the Libby Reservoir. We have before us a request for $46,000. There have been previous allocations for planning in the amount of $520,500.

This project is now estimated to cost $263,221,000, which is somewhat less than the estimate at the time the project was presented to the committee last year. But I understand there has been a considerable amount of research done and some change in the overall planning of this project. Is that correct? Will you bring us up to date on this project since last year's presentation?

Colonel WHIPPLE. The Libby Reservoir, as you know, is one of the very finest projects in the main control plan for the Columbia River. It is exceptionally advantageous from the point of view of hydroelectric power and flood control, not only at the site but on account of the enormous contribution to power production which it makes downstream. The reservoir itself extends into Canada and also benefits areas in Canada, so it has been tied up with negotiations through the International Joint Commission.

Since the hearings last year, we have continued studies with the funds the committee made available to develop the potentialities of the upper site at mile 217 on the Kootenai River.

The project document authorized construction of the dam at a site which was then tentatively selected at mile 213. This plan as it was then developed considered at a possibly more advantageous site 8 miles downstream at mile 205. In the course of the planning for the site at mile 205, we ran into extreme objections on the part of lumber interests and also mining interests in the reservoir area, as well as very great difficulties on account of the relocation of the Great Northern Railroad.

We have now completed our studies and have definitely decided the project should be developed at mile 217, which is 12 miles above the lower site and 4 miles above the project document site. This somewhat reduces the amount of storage that can be obtained but it still provides a greater amount of storage than is contemplated in the project document. It entirely obviates the difficulties with the lumber interests who were affected by the lower site, and entirely obviates any difficulty from the Zonolite Co. mining. The Great Northern Railroad relocation that will be required is reduced in length by 41 miles by this change. So, we anticipate those difficulties with the railroad to be reduced also, since the railroad lines can follow the same general alinement that they now follow along the river, instead of a relocation completely out of the reservoir area.

The cost estimate is reduced from approximately $284 million to $263 million. This is on account of the change of site, which necessarily meant that the dam itself would be less in height. The railroad

relocations are not reduced proportionately, because they go through a more rugged and difficult country. So the relocations cost will be increased even though the relocations themselves will be much shorter and much more acceptable, we feel, to the railroad.

Since the International Joint Commission must continue negotiation of this project with Canada prior to its construction, the objective of our request for funds at this time is to continue planning to a sufficient degree to outline the relocation plan and develop the data necessary and in a form that will be required to prosecute the application for construction through the International Joint Commission. This will allow, we hope, an agreement as to a means for reimbursing the Canadians for the loss of power potentials on the portion of the river upstream in Canada, as well as for rights of way that will be required in Canada.

There has been considerable publicity on both sides of the international line in this connection and it is apparent that considerable negotiation will be required before we can settle the many difficult policy questions involved in reaching that decision. Therefore this project obviously is not ready to start construction, nor are we requesting planning funds that would be sufficient to put it in shape to start construction. We are asking for funds merely to forward negotiations with Canada to enable this project to be constructed at a later date after we have reached an international agreement covering the subject.

Mr. DAVIS. If I recall correctly, last year this was taken off of the agenda of the International Joint Commission at a time when there was scheduled to be some discussion concerning it. Is that correct?

Colonel WHIPPLE. Yes, sir, and at one time we were limited in any application of planning funds to this project, as you recall, on account of those difficulties. We hope the project can be reintroduced on the agenda after the development of further plans based on the new site and it is for that reason that these funds are requested.

Mr. DAVIS. How much consideration has been given to the development of a project in this general area which, as I understand it, has very beneficial effects on the downstream power projects that will not require collaboration with the Canadians?

Colonel WHIPPLE. We have made such studies, but it would be very unfortunate to have such a wonderful potential site for development and not take the maximum advantage of it. The lower site would lose out in too much storage and you would permanently lose the potential for storing that water. And although that might have to be done if we entirely fail to reach an agreement, it would be manifestly to the advantage of the United States and Canada, considered jointly, to have a development that is far superior to what you otherwise would be forced to. And we feel that a very strong effort should be made to convince the Canadians that they should participate in this project prior to abandoning it and going to a development that, while still economically justified, would be so much inferior to this that it would represent a gross waste of the natural resource potential for the Columbia Basin.

HILLS CREEK RESERVOIR, OREG.

Mr. DAVIS. In Oregon, the Hills Creek Reservoir has an estimate of cost of $32,261,000. We have before us a request for $125,000. There have been previous allocations for planning in the amount of $420,000.

This is to complete planning and bring it up to a point where construction can be initiated?

Colonel WHIPPLE. Yes, sir. As you know, this project functions as a unit together with the Lookout Point Reservoir below, and planning is well advanced. With these funds, we will continue studies on the dam itself and the relocations, the outlet and diversion works, and be prepared to undertake construction at such time as funds are made available.

CARTHAGE DAM, TENN.

Mr. DAVIS. In Tennessee, the Carthage Dam has an estimated Federal cost of $43,073,000. We have before us a request for $40,000 to bring the planning to completion. There have been previous allocations of $280,000.

I note an increase in the cost estimate of $2,273,000. Is that purely a costing matter, or has there been some change in the scope of the project as your planning has developed?

Colonel WHIPPLE. It is a matter of general price increases, together with an estimate for resettlement costs that would be entailed in this construction.

Mr. DAVIS. This is a part of the Cumberland system of locks and dams in that part of Tennessee, is it?

Colonel WHIPPLE. Yes, sir; that is correct. We have the existing powerplants at the Wolf Creek and Dale Hollow Dams which will function as a unit together with this one. It will also be related to the projects at Old Hickory and Cheatham, which are under construction downstream. This is a power project, but it is related to other parts of the comprehensive plan for the development of the Cumberland Basin.

The benefit-to-cost ratio is 1.55 to 1 and the completion of this planning will allow the initiation of construction.

ICE HARBOR LOCK AND DAM, WASHINGTON

Mr. DAVIS. The Ice Harbor lock and dam in Washington is now estimated at $135,930,000. We have before us a request for $20,000 for planning. There have been previous allocations of $1,082,200.

The subcommittee's concern with this project each time we have an opportunity to observe it is that last year the cost estimate jumped from $122 million to $130 million and now it appears to have jumped another $6 million.

Colonel WHIPPLE. Yes, sir.

Mr. DAVIS. I understood from the testimony last year that the planning funds at that time were to complete the planning for the project.

Colonel WHIPPLE. The planning funds were justified to you as sufficient to allow initiation of construction of the project. However, it is considered it would be desirable to continue certain smaller aspects of the planning to a more detailed stage. We would like to complete the design of the diversion works in more detail than we have to date, and also carry further the preliminary design of the powerplant.

The increase in the cost estimate is accounted for entirely by the general price rise of approximately 5 percent since the previous year.

It is based on an overall index and no reestimate has been made during that time. It is simply a matter of revising upward in accordance with the cost index increases. No new developments in the meantime have occurred which would indicate anything different than that the general price index would apply.

WEDNESDAY, JANUARY 27, 1954.

FLOOD CONTROL, MISSISSIPPI RIVER AND TRIBUTARIES

WITNESSES

BRIG. GEN. JOHN R. HARDIN, PRESIDENT, MISSISSIPPI RIVER COMMISSION
A. L. ALDRIDGE, ENGINEER, MISSISSIPPI RIVER COMMISSION
H. V. DARLING, ENGINEER, OFFICE, CHIEF OF ENGINEERS

Amounts available for obligation

	1953 actual	1954 estimate	1955 estimate
Appropriation or estimate		$51,433,000	$45,200,000
Prior year balance available			500,000
Balance transferred (pursuant to Public Law 153) from—			
"Flood control, Mississippi River and tributaries"		356,834	
"Flood control on tributaries of Mississippi River, emergencies"		589,225	
Reimbursements from non-Federal sources		50,000	50,000
Reimbursements from other accounts		50,000	50,000
Total available for obligation		52,479,059	45,800,000
Balance available in subsequent year		−500,000	
Obligations incurred		51,979,059	45,800,000
Comparative transfer from—			
"Flood control, Mississippi River and tributaries"	$61,214,705		
"Flood control on tributaries of Mississippi River, emergencies"	460,497		
Total obligations	61,675,202	51,979,059	45,800,000

NOTE.—Reimbursements from non-Federal sources are received from private individuals, commercial concerns, nonappropriated funds, and States and municipalities (33 U. S. C. 558, 559, 571, 701, and 701k)

Obligations by activities

Description	1953 actual	1954 estimate	1955 estimate
Direct Obligations			
1. Construction:			
(a) Main stem	$31,478,061	$22,881,014	$20,899,000
(b) Off main stem	13,866,163	13,577,062	9,801,000
2. Maintenance:			
(a) Main stem	12,577,742	12,805,836	13,210,000
(b) Off main stem	1,701,797	2,025,922	1,790,000
3. Flood control emergencies, repair and flood fighting and rescue work	460,497	589,225	
Total direct obligations	60,084,260	51,879,059	45,700,000
Obligations Payable Out of Reimbursements From Other Accounts			
1. Construction:			
(a) Main stem:			
(1) Corps of Engineers military functions	226,158		
(2) Other Department of the Army military functions	40,593		
(3) Department of the Air Force	23,096		
(4) Other Federal agencies	145,650	25,000	25,000
(5) Non-Federal agencies	205,200	5,000	5,000
(b) Off main stem (non-Federal agencies)	42,102	5,000	5,000
2. Maintenance:			
(a) Main stem:			
(1) Other Department of the Army military functions	342,681		
(2) Other Federal agencies	201,427	25,000	25,000
(3) Non-Federal agencies	5,032	5,000	5,000
(b) Off main stem (non-Federal agencies)	359,003	35,000	35,000
Total obligations payable out of reimbursements from other accounts	1,590,942	100,000	100,000
Total obligations	61,675,202	51,979,059	45,800,000

Obligations by objects

Object classification	1953 actual	1954 estimate	1955 estimate
CORPS OF ENGINEERS			
Summary of Personal Services			
Total number of permanent positions		1,630	1,477
Full-time equivalent of all other positions		171	158
Average number of all employees		1,661	1,509
Average salaries and grades:			
General schedule of grades:			
Average salary		$4,694	$4,729
Average grade		GS–6.8	GS–6.8
Crafts, protective, and custodial grades:			
Average salary		$3,480	$3,510
Average grade		CPC–5.5	CPC–5.5
Grades established by act of May 15, 1928 (33 U. S. C. 702h): Average salary		$7,500	$7,500
Ungraded positions: Average salary		$3,112	$3,112
Personal service obligations:			
Permanent positions		$5,430,187	$4,980,912
Other positions		514,000	472,000
Regular pay in excess of 52-week base		20,813	19,088
Payment above basic rates		805,000	738,000
Total personal service obligations		6,770,000	6,210,000
Direct Obligations			
01 Personal services		6,760,000	6,200,000
02 Travel		175,000	175,000
03 Transportation of things		300,000	250,000
04 Communication services		15,000	15,000
05 Rents and utility services		40,000	40,000
07 Other contractual services		891,553	793,000
Services performed by other agencies		100,000	100,000
Services performed by "Revolving fund, Corps of Engineers"		15,000,000	14,000,000
08 Supplies and materials		6,000,000	5,000,000
09 Equipment		100,000	75,000
10 Lands and structures		22,575,059	19,313,000
13 Refunds, awards, and indemnities		9,000	9,000
15 Taxes and assessments		30,000	30,000
Subtotal		51,995,612	45,818,000
Deduct charges for quarters and subsistence		125,000	125,000
Total direct obligations		51,870,612	45,693,000
Obligations Payable Out of Reimbursements From Other Accounts			
01 Personal services: Civilian		10,000	10,000
02 Travel		2,000	2,000
03 Transportation of things		500	500
05 Rents and utility services		1,000	1,000
06 Printing and reproduction		50	50
07 Other contractual services		15,000	15,000
08 Supplies and materials		10,000	10,000
10 Lands and structures		61,350	61,350
15 Taxes and assessments		100	100
Total obligations payable out of reimbursements from other accounts		100,000	100,000
Total obligations		51,970,612	45,793,000
ALLOCATION TO FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR			
02 Travel		96	
04 Communication services		11	
06 Printing and reproduction		25	
07 Other contractual services		24	
08 Supplies and materials		63	
Total obligations		219	

Obligations by objects—Continued

Object classification	1953 actual	1954 estimate	1955 estimate
ALLOCATION TO GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR			
Total number of permanent positions		1	1
Average number of all employees		1	1
Average salaries and grades:			
General schedule grades:			
Average salary		$4,578	$4,608
Average grade		GS-6.8	GS-6.8
01 Personal services: Permanent positions		$6,200	$5,200
02 Travel		400	300
04 Communication services		100	100
06 Printing and reproduction		100	
07 Other contractual services		100	100
08 Supplies and materials		758	1,300
Total obligations		7,658	7,000
ALLOCATION TO COAST AND GEODETIC SURVEY, DEPARTMENT OF COMMERCE			
01 Personal services		570	
SUMMARY			
Summary of Personal Services			
Total number of permanent positions		1,631	1,478
Full-time equivalent of all other positions		171	158
Average number of all employees		1,662	1,510
Average salaries and grades:			
General schedule grades:			
Average salary		$4,694	$4,729
Average grade		GS-6.8	GS-6.8
Crafts, protective, and custodial grades:			
Average salary		$3,480	$3,510
Average grade		CPC-5.5	CPC-5.5
Grades established by act of May 15, 1928 (33 U. S. C. 702h):			
Average salary		$7,500	$7,500
Ungraded positions: Average salary		$3,112	$3,112
Personal service obligations:			
Permanent positions		$5,436,957	$4,986,112
Other positions		514,000	472,000
Regular pay in excess of 52-week base		20,813	19,088
Payment above basic rates		805,000	738,000
Total personal service obligations		6,776,770	6,215,200
Direct Obligations			
01 Personal services: Civilian		6,766,770	6,205,200
02 Travel		175,496	175,300
03 Transportation of things		300,000	250,000
04 Communication services		15,111	15,100
05 Rents and utility services		40,000	40,000
06 Printing and reproduction		125	
07 Other contractual services		891,677	793,100
Services performed by other agencies		100,000	100,000
Services performed by "Revolving fund, Corps of Engineers"		15,000,000	14,000,000
08 Supplies and materials		6,000,821	5,001,300
09 Equipment		100,000	75,000
10 Lands and structures		22,575,059	19,131,000
13 Refunds, awards, and indemnities		9,000	9,000
15 Taxes and assessments		30,000	30,000
Subtotal		52,004,059	45,825,000
Deduct charges for quarters and subsistence		125,000	125,000
Total direct obligations		51,879,059	45,700,000

Obligations by objects—Continued

Object classification	1953 actual	1954 estimate	1955 estimate
SUMMARY—continued			
Obligations Payable Out of Reimbursements From Other Accounts			
01 Personal services: Civilian		$10,000	$10,000
02 Travel		2,000	2,000
03 Transportation of things		500	500
05 Rents and utility services		1,000	1,000
06 Printing and reproduction		50	50
07 Other contractual services		15,000	15,000
08 Supplies and materials		10,000	10,000
10 Lands and structures		61,350	61,350
15 Taxes and assessments		100	100
Total obligations payable out of reimbursements from other accounts		100,000	100,000
Total obligations		51,979,059	45,800,000

Analysis of expenditures

	1953 actual	1954 estimate	1955 estimate
Unliquidated obligations, start of year			$10,999,116
Obligations transferred, pursuant to Public Law 153, from—			
"Flood control, Mississippi River and tributaries"		$4,114,019	
"Flood control on tributaries of Mississippi River emergencies"		6,038	
Obligations incurred during the year		51,979,059	45,800,000
		56,099,116	56,799,116
Deduct:			
Reimbursements		100,000	100,000
Unliquidated obligations, end of year		10,999,116	11,699,116
Total expenditures		45,000,000	45,000,000
Expenditures are distributed as follows:			
Out of current authorizations		41,500,000	35,000,000
Out of prior authorizations		3,500,000	10,000,000

Mr. DAVIS. The subcommittee is now ready to proceed with the consideration of the request of $45,200,000 for flood control on the Mississippi River and its tributaries. We will insert the justifications on pages 752 and 753 into the record at this point.

(The matter referred to follows:)

Summary of projects (direct obligations)

Project Number (1)	Purpose of project (2)	Actual obligations fiscal year 1953 (3)	Estimated obligations fiscal year 1954 (4)	Estimate fiscal year 1955 (5)
1	Construction:			
	(*a*) Main stem	$31,478,061	$22,881,014	$20,899,000
	(*b*) Off main stem	13,866,163	13,577,062	9,801,000
2	Maintenance:			
	(*a*) Main stem	12,577,742	12,805,836	13,210,000
	(*b*) Off main stem	1,701,797	2,025,922	1,790,000
3	Flood control emergencies, repair and flood fighting and rescue work	460,497	589,225	0
	Total direct obligations	60,084,260	51,879,059	45,700,000
	Prior year balance available	0	0	−500,000
	Balance transferred, pursuant to Public Law 153, from—			
	"Flood control, Mississippi River and tributaries"	0	−356,834	0
	"Flood control on tributaries of Mississippi River, emergencies"	0	−589,225	0
	Balance available in subsequent year	0	+500,000	0
	Comparative transfer from—			
	"Flood control, Mississippi River and tributaries"	−59,623,763	0	0
	"Flood control on tributaries of Mississippi River, emergencies"	−460,497	0	0
	Total appropriation or estimate	0	51,433,000	45,200,000

1. Construction:			
(*a*) Main stem:			
Mississippi River levees	$853,000		
Bank-stabilization works	18,775,000		
Mapping	200,000		
Memphis Harbor	571,000		
Subtotal		$20,399,000	
(*b*) Off main stem:			
St. Francis Basin	$2,736,000		
Lower White River Basin	205,000		
Lower Arkansas River	480,000		
Tensas River Basin	2,067,000		
Yazoo River Basin	908,000		
Atchafalaya River Basin	3,175,000		
Lake Pontchartrain	230,000		
Subtotal		9,801,000	
Total construction			30,200,000
2. Maintenance:			
(*a*) Main stem	$13,210,000		
(*b*) Off main stem	1,790,000		
Total maintenance			15,000,000
3. Flood-control emergencies, repair and flood fighting and rescue work			0
Grand total			45,200,000

GENERAL STATEMENT

Mr. DAVIS. We are pleased to have with us an old friend of the committee who appeared before us frequently in 1952 and 1953 in a little different capacity. Since then he has become chairman of the committee which has the major responsibility for the significant and

always interesting projects on the Mississippi River and its tributaries.

We are happy to have General Hardin, Mr. Aldridge, and Mr. Darling with us and we will be pleased to have you present such information as you wish with respect to this overall program and problem. Then we will probably have some questions with respect to the specifics at a later time.

General HARDIN. Thank you, Mr. Chairman. I consider it a privilege to be able to appear before your committee.

I have no prepared statement to present, but I will make a few comments just to lay the groundwork for any detailed questions you may choose to ask.

The present project for flood control on the Mississippi River and its tributaries was authorized by the act of May 15, 1928, and has been amended a number of times.

The monetary limitations of the authorizations for this comprehensive project are $1,292,748,500, of which $848,770,400 has been appropriated to date, leaving in the authorization $443,978,100 yet to be appropriated.

It can be said that the project on the authorized monetary basis is, then, about 65.6 percent complete. This does not cover all of the improvements that have been made in the lower valley; because, before the Federal Government entered into the undertaking, the public itself had spent large sums—prior to 1928, approximately $292 million, and the total up to 1953, including the work before the authorized project was adopted, is $349 million that have been expended by local interests, either independently or in conjunction with the Federal Government in this effort.

THE COMPREHENSIVE PROJECT

It is a comprehensive project, and will provide protection against floods in the alluvial valley of the Mississippi River below Cape Girardeau, Mo., and the improvement of the Mississippi River for navigation between Cairo, Ill., and Baton Rouge, La.

In addition to the main river, the project includes that portion of the basins of the St. Francis, the White, the Arkansas, the Tensas, the Red, the Yazoo and Atchafalaya Rivers, all lying in the alluvial valley and the alluvial lands adjacent to the gulf coast.

When completed, the project will provide protection against a maximum possible flood resulting from the coincidence of probable maximum tributary flows.

This large quantity of water will be controlled and carried to the gulf by various means, namely, levees, reservoirs, cutoffs, bank stabilizations, and floodways.

Although the project is not complete, it has been very effective in preventing some major flood results on three occasions since the great flood of 1927, and many lesser losses in other years.

The benefits resulting from flood damages prevented since 1928 were estimated the last time in 1952 to be $4.7 billion. The cost-benefit ratio for the entire comprehensive project is 3.7 to 1, which is a favorable ratio.

Mr. Chairman, I think that any further development of the project might probably fall under the details of the justifications, and I would be repeating beyond what is necessary if I said anything more than the general statement.

Mr. DAVIS. I suggest, then, that you be as complete as you think necessary in order to develop the full story here, in discussing some of the specifics of this program.

COMPOSITION OF MISSISSIPPI RIVER COMMISSION

General Hardin, will you tell us the present makeup of the Mississippi River Commission of which you are the chairman?

General HARDIN. Yes, sir. The Mississippi River Commission has been in a state of existence since 1879, I believe, but it is reconstituted in the Flood Control Act of 1928, which provided authorization for this comprehensive work.

The Commission consists of a president, 2 civilian members who shall be civil engineers, and 1 businessman civilian, making it 3, and in addition to that, there shall be 2 military members who are members of the Corps of Engineers, and 1 member from the Coast and Geodetic Survey, making a total of 7.

Mr. DAVIS. Has there been any change in the membership other than the fact that you succeeded General Feringa as president of the Commission since last year?

General HARDIN. No, sir; there has been no other change. There is at the present time one unfilled vacancy in the military membership due to the death of General Graves. General Graves died on June 9, this past year.

Mr. DAVIS. Colonel Vogel is the other Corps of Engineers member of the Commission?

General HARDIN. Yes, sir.

NAVIGATION ON THE MISSISSIPPI RIVER

Mr. DAVIS. Has there been any significant developments in the field of navigation on the river during the course of the last year?

General HARDIN. Yes, there were interesting developments, Mr. Chairman. We have had now on the Mississippi River 2 years of extreme low water, and this year was the lowest of all time, recorded in certain reaches of the Mississippi, particularly in the vicinity of Memphis, and we would have normally expected to have encountered difficulties with keeping the project depth of the river available to traffic, but the improvements that we have been able to make in the stabilization program along the Mississippi River has now improved the flow characteristics of the river in such a fashion that we were able to maintain navigation even under these extreme low flows of this year, without an extraordinary amount of maintenance dredging.

The dredging was able to keep well above the requirements of the deep traffic tows that are presently using the river, and very few groundings took place.

We were able to retire our dredges back to their bases after an unexpectedly brief period of operation.

The river at the present time is rising, but it may again fall before spring, and repeat the problem of low-flow conditions.

We have been greatly impressed with the benefits that are accruing from our stabilization program, which is just now reaching the point where you begin to see that we have enough revetment in certain reaches to really demonstrate its effectiveness.

It keeps the river from cutting its banks and carrying large amounts of sand in suspension and depositing it in the course of the ordinarily meandering pattern of the river, and we feel it also increases the flood-carrying capacity of the river, because it develops a more efficient channel.

CAPTURE OF THE MISSISSIPPI BY THE ATCHAFALAYA

Mr. DAVIS. We have been hearing a considerable amount of discussion from time to time with respect to the so-called recapture of the river.

Will you bring us up to date on this Atchafalaya problem and the danger of the loss of the river in its present course, please?

General HARDIN. Several years ago, after the high water of 1950, studies were resumed on the tendency of the Mississippi River to change its course to the more attractive route to the gulf by way of the Atchafalaya, it being attractive because of the much shorter distance involved.

This study was a resumption of one which has been continued since the establishment of the Mississippi River Commission, and knowing that the favorable conditions would arise for the Mississippi River to change its course, we would have to be alert to that tendency and take provisions to overcome it.

Several reports have been made to the Congress on the subject in the past, but it has generally been felt under those conditions—the conditions obtaining at that time—that there was no immediate danger to the Mississippi diverting its major flows.

However, as the Atchafalaya has grown in size over the past 25 years, since the flood of 1927, it has been more and more in active consideration in the forward planning of the Mississippi River Commission.

A long and comprehensive technical investigation was completed by the Commission, both from the standpoint of hydraulics and from the standpoint of geology, and our report dated 1951 was approved by the Chief of Engineers in 1952, at which time the Commission was directed to proceed with detailed planning to prevent the indicated diversion of the major flows of the Mississippi.

It was the conclusion of the Mississippi River Commission after studying all of the facts that had been accumulated over many years of records, and the present tendency, that the Mississippi would divert its major flows within the relatively near future, if steps were not taken to prevent it.

The timing of that diversion was estimated to be over a span of years, somewhere between 1968 and 1985, depending upon the occurrence of storms and major runoffs, and other things that cannot be accurately predicted. However, the Commission pointed out that the critical stage might be reached as early as 1965, the critical stage being that period when the river is in approximate balance, and when it may shift very suddenly.

We are at the present preparing a comprehensive recommendation on the subject which will be in the hands of the Chief of Engineers, we expect, in mid-February, with the idea that we will obtain an authorization for the undertaking and to lay before the Congress the reasons for the undertaking and the proposed method of treatment, as well as the estimated cost.

Mr. DAVIS. Can you furnish us a rough estimate of what you anticipate that is going to cost as of this time, recognizing that it has to be very rough?

General HARDIN. I can express it better in the span of figures.

If the tentative treatment which we have prepared for consideration by the Chief of Engineers is approved, it will be somewhere in the 70- to 80-million-dollar range. It will take about 8 to 10 years to build it, and it should be considered that ample time should be provided in order that we can build it under economical conditions, and not have to pay premiums for working under unfavorable conditions of high water and urgency.

UNEXPENDED AND UNOBLIGATED BALANCES

Mr. DAVIS. What is the financial situation on the Mississippi River in the area in which you have jurisdiction, General Hardin?

General HARDIN. Do you mean with regard to expenditures and obligations, Mr. Chairman, as we forecast them for this fiscal year?

Mr. DAVIS. Yes; if you will.

General HARDIN. We expect to end fiscal year 1954 with an unobligated balance of $500,000. This has not been a figure of our choosing, but one of limitation on obligations and expenditures. We feel we could have obligated that sum, but we will have, and are using, as our target, $500,000 in obligation carryover.

The expenditure balance, which is within our limitation on expenditures, as prescribed by the Chief of Engineers, will be $4,784,896, to round the figure out, with a carryover of our emergency fund which, as you know, is a continuing fund for use in emergencies, of $427,165, making a total balance of unexpended funds at the end of June 30, 1954, of $5,212,061.

Mr. DAVIS. And this carryover in your emergency fund explains the fact that we do not have a request for replenishment of the fund before us in the 1955 fiscal year; is that correct?

General HARDIN. That is correct, Mr. Chairman.

ALLOCATION BY FISCAL YEAR

Mr. DAVIS. Last year in our hearings there was inserted on page 747 a table showing the allocation of funds at the various projects, included in this overall project for the past 5 fiscal years.

Will you bring that table up to date for insertion in the record, for this fiscal year?

General HARDIN. Yes, sir; I have such a table prepared.

(The matter referred to follows:)

Allocations by fiscal years, flood control, Mississippi River and tributaries

	Allocated, fiscal year—						
	1948	1949	1950	1951	1952	1953	1954 (estimated)
Mississippi River levees	$4,788,500	$9,273,300	$5,272,305	$6,848,500	$6,329,000	$5,738,500	$5,928,759
Revetments	16,496,080	24,244,771	28,950,021	25,080,500	23,585,810	30,780,153	19,516,438
Dredging	3,953,500	4,707,829	4,627,200	3,638,000	2,857,000	4,308,433	3,963,822
Mapping	118,600	285,000	314,000	184,500	233,000	190,000	225,000
Memphis Harbor	820,000	1,345,000	2,355,000	1,550,000	1,110,000	1,050,000	1,725,000
Morganza Floodway	2,095,000	1,862,403	4,846,497	5,814,000	6,310,000	1,096,093	591,100
St. Francis Basin	1,094,800	720,000	630,000	747,000	1,003,000	606,000	2,325,000
Lower White River	868,200	329,300	210,200	161,000	235,000	322,000	732,500
Arkansas River levees	387,000	1,535,500	476,641	1,226,000	700,000	572,000	712,845
Yazoo River Basin	4,880,100	6,074,909	9,065,359	9,593,000	7,350,000	5,702,000	6,008,150
Big Sunflower River, etc	100,000	0	97,000	286,000	0	0	418,000
Boeuf and Tensas	926,000	895,000	530,000	1,350,000	1,720,000	1,648,000	1,396,000
Red River backwater	1,100,000	70,000	916,000	1,000,000	1,200,000	1,586,000	993,000
Lower Red River	702,500	1,005,000	1,013,400	558,000	357,000	157,278	69,748
Atchafalaya River Basin	7,088,000	3,741,597	4,922,100	3,568,524	5,404,250	4,368,437	5,200,530
Bayous Rapides, Boeuf and Cocodrie	1,082,000	445,000	495,403	399,000	35,000	0	1,000
Surveys, gages, and observations	508,300	876,600	887,800	886,000	835,000	761,000	698,881
Bonnet Carre spillway	47,900	133,000	148,000	329,881	165,000	235,000	122,563
Jonesville, La					70,000	0	0
Lake Pontchartrain					245,000	584,106	804,664
Plant	2,690,000	2,618,600	969,309	−2,014,000	590,000	0	0
Subtotal	49,746,480	60,162,809	66,726,235	61,205,905	60,334,060	59,705,000	51,433,000
Waterways experiment station	108,700	647,100	24,474	0	0	0	0
Office, Chief of Engineers, salaries	143,820	190,091	208,091	194,495	165,940	193,000	0
Rock Island sec. 6 levees	1,000	0	41,200	0	0	122,000	0
Total	50,000,000	61,000,000	67,000,000	61,400,400	60,500,000	60,020,000	51,433,000

STATUS OF AUTHORIZATIONS, APPROPRIATIONS, AND PROGRAMS

Mr. DAVIS. On pages 747 and 748 of the hearings last year, we had a table showing the status of authorizations and appropriations and programing, and I wonder if you will prepare a similar table and insert it in the record, please?

General HARDIN. We have that available, too, Mr. Chairman.

Mr. DAVIS. That is fine; and we will insert it in the record at this point.

Flood control, Mississippi River and tributaries, appropriation

Item of work	Distribution under authorization	Appropriation to June 30, 1954	Percent complete to June 30, 1954	1955 program	Estimated percent complete to June 30, 1955	Amount required to complete
(1)	(2)	(3)	(4)	(5)	(6)	(7)
CONSTRUCTION						
Main stem:						
Mississippi River levees	$265,847,000	$206,817,200	77.8	$853,000	78.1	$56,176,800
Bank Stabilization Works	356,935,400	226,686,000	64	18,775,000	69	111,474,400
Dredging	91,300,000	75,098,000	82	0	82	16,202,000
Mapping	4,863,000	3,664,300	75	200,000	79	998,700
Memphis Harbor	21,600,000	9,980,000	46	571,000	49	11,049,000
Devils Swamp	2,500,000	0	0	0	0	2,500,000
Morganza control structure	20,680,000	19,820,000	96	0	96	860,000
Completed work	17,967,000	17,967,000	100	0	100	0
Subtotal	781,692,400	560,032,500		20,399,000		201,260,900
Off main stem:						
St. Francis Basin	44,826,000	19,348,200	43	2,736,000	49	22,741,800
Lower White River	13,110,000	9,048,800	69	205,000	71	3,856,200
Cache River Basin	10,000,000	0	0	0	0	10,000,000
L'Anguille River	2,000,000	0	0	0	0	2,000,000
West Tennessee tributaries	7,700,000	0	0	0	0	7,700,000
Grand Prairie-Bayou Meto	6,000,000	0	0	0	0	6,000,000
Lower Arkansas River:						
North bank levees	11,910,000	3,746,500	31	480,000	35	7,683,500
South bank levees	15,340,000	13,053,700	85	0	85	2,286,300
Tensas River Basin:						
Boeuf, Tensas, Lafourche, etc	20,781,000	8,575,000	41	1,727,000	50	10,479,000
Red River Backwater area	8,653,000	7,281,400	84	340,000	88	1,031,600
Protection Tensas-Cocodrie area	20,347,000	0	0	0	0	20,347,000
Yazoo River Basin:						
Reservoirs	70,972,300	70,736,300	99	0	99	236,000
Local protection	7,605,300	3,501,500	46	908,000	58	3,195,800
Auxiliary channels	20,500,000	91,200	0.4	0	0.4	20,408,800
Main stem	21,127,800	4,521,700	21	0	21	16,606,100
Major tributaries	19,784,900	3,071,700	16	0	16	16,713,200
Minor tributaries	7,209,700	150,200	2	0	2	7,059,500
Backwater area	26,800,000	169,100	0.6	0	0.6	26,630,900
Big Sunflower, Steele Bayou, etc	7,500,000	821,000	11	0	11	6,679,000
Lower Red River	8,860,000	8,156,200	92	0	92	703,800
Atchafalaya River Basin:						
Levees and structures	124,830,000	104,797,400	84	3,175,000	86	16,857,600
Bayous Rapides, Boeuf and Cocodrie	4,290,000	3,374,500	79	0	79	915,500
Lake Pontchartrain	3,150,000	584,400	19	230,000	26	2,333,600
Amite River	50,000	0	0	0	0	50,000
Completed work	2,764,600	2,764,600	100	0	100	0
Subtotal	486,111,600	263,793,400		9,801,000		212,517,200
Plant account (transfer to revolving fund)	24,944,500	24,944,500		0		413,778,100
Grand total, flood control, Mississippi River and tributaries	1,292,748,500	848,770,400		30,200,000		413,778,100

ALLOCATION OF FISCAL YEAR 1954 FUNDS

Mr. DAVIS. Will you prepare for our record a tabulation of your actual allocation of funds for the current fiscal year?

General HARDIN. Yes, sir; I will, Mr. Chairman.

(The matter referred to follows:)

Allocation of fiscal year 1954 appropriation

1. Construction:	
(a) Main stem:	
Mississippi River levees	$3,622,350
Bank stabilization works	18,145,000
Mapping	190,000
Memphis Harbor	1,235,000
Subtotal	23,192,350
(b) Off main stem:	
St. Francis Basin	2,375,000
Lower White River	522,500
Lower Arkansas River	437,000
Tensas River Basin	2,584,000
Yazoo River Basin	3,778,150
Big Sunflower River, Steele Bayou, etc	418,000
Atchafalaya River Basin	2,736,000
Lake Pontchartrain	590,000
Subtotal	13,440,650
Total construction	36,633,000
2. Maintenance:	
(a) Main stem	12,786,000
(b) Off main stem	2,014,000
Total maintenance	14,800,000
3. Flood control emergencies, repair and flood fighting and rescue Work	0
Grand total	51,433,000

CONSTRUCTION

MAIN-STEM

Mr. DAVIS. We will discuss the items of construction.

We will have the table on page 754 inserted in the record at this point.

(The matter referred to follows:)

1. Construction—summarized financial data

	Amount	Percentage of authorized cost
Total authorized cost	$1,292,748,500	
Total appropriations to June 30, 1953	812,137,400	62.8
Appropriation, fiscal year 1954	36,633,000	2.8
Total appropriations to date	848,770,400	65.6
Appropriation requested for 1955	30,200,000	2.3
Balance to complete after 1955	413,778,100	32.1

Mr. DAVIS. On page 753, it is indicated that for main-stem construction, we have before us a request of $20,399,000, and the first of the headings, for purposes of discussion, within that total amount, is $853,000 for Mississippi River levees.

Last year there was prepared and inserted in the record a tabulation showing the miles and average unit cost of the levees and bank protection. I wonder if we may have a similar table for insertion in the record for this year?

General HARDIN. Yes; we have that prepared, and up to date.

Mr. DAVIS. That is fine, and we will insert the table into record at this point.

(The matter referred to follows:)

Levee and bank protection mileage and average unit cost

Fiscal year	Mississippi River levees		Off main river levees		Revetments (new work)		
	Miles constructed	Average cost per cubic yard	Miles constructed	Average cost per cubic yard	Miles constructed	Gross squares per mile [1]	Average cost per square [2]
		Cents		*Cents*			
1948	35	26.6	51	30.5	10	21,078	47.14
1949	46	34.3	1.39	34.9	14	18,232	50.62
1950	58	31.4	1.28	34.2	22	18,840	41.47
1951	60	31.9	44	36.6	25	21,102	36.62
1952	34	36.5	55	31.6	21	21,736	33.45
1953	33	30.7	68	28.6	34.7	17,603	36.90
1954 (estimated)	31	25.6	58	22.8	23.09	17,854	38.94

[1] Gross squares subaqueous mattress per mile varies with river stages at time of construction.
[2] Unit cost is based on total cost including grading, upper bank paving, mattress mobilization, demobilization, layup and other indirect costs divided by gross squares of subaqueous mattress.

MORGANZA FLOODWAY

Mr. DAVIS. Did you get the Morganza Floodway pretty well cleaned up with the funds that we appropriated last year?

General HARDIN. Yes, sir; this budget has within it the sum of $800,000 which will come out of the Atchafalaya figure for reimbursement of the Morganza, and those funds will complete the project.

With the funds in hand we are able to bring the project practically to completion, but the surfacing of the highway, degrading the front-line levee, and the clearing operations remain to be done with the funds that will be transferred back to it from the Atchafalaya program.

MISSISSIPPI RIVER LEVEES

Mr. DAVIS. Will you tell us what you contemplate in the way of your main-stem levee program in 1955 fiscal year?

General HARDIN. The main-stem levee project, of course, has been our predominant feature of the flood-control program in the Mississippi River Basin, and we have not brought all levees up to project grade and section. There remains approximately 300 miles of levees which need some further treatment either in section or in grade.

With the limited budget that we are operating on in 1955, we felt that the relative need for main-line levee work, as opposed to other things, made it necessary for us to decrease the usual amount on the completion of the levee side of this program, and for that reason, there is within this budget a sum of only $853,000 for fiscal year 1955.

This will bring about 12 miles of the remaining levee line at 5 locations to project grade and section.

Those locations are in various parts of the valley. I think there is 1 in the upper reach; 2 in the central reach, and 1 well down toward New Orleans, and the fifth one is in the area in the southern central section just below Vicksburg.

Mr. DAVIS. I believe this would be a good place in the record to insert your allocations, so that they may be identified for the record, if you will.

General HARDIN. This is the location and the estimated cost of these five proposed enlargement undertakings for fiscal year 1955.

Mr. DAVIS. We will insert that in the record at this point.

(The matter referred to follows:)

Mississippi River levees breakdown, fiscal year 1955

Lower St. Francis Levee District, Mo., below Caruthersville, Mo., enlargement	$173,000
Upper Yazoo Levee District, Miss., lower Jefferies, Miss., enlargement	230,000
Lower Yazoo Levee District, Miss., Mayersville, Miss., enlargement	264,000
Lower Tensas Levee District, La., Bayou Vidal-Elk River, enlargement	126,000
Lafourche Levee District, La., Avondale, La., enlargement	60,000
Total	853,000

Mr. DAVIS. Each of these locations represents a continuation of existing levee work there, does it not?

General HARDIN. Rather, an enlargement of an existing levee. It is not any new levee. It is bringing a levee up to the required grade for the project flood conditions.

This, in effect, is an enlargement of the work which was done by local interests in some places before we took the work over.

Mr. DAVIS. How many miles of levee are involved in the work that you plan to do with this requested appropriation?

General HARDIN. We will be able to do approximately 12 miles of levee work on an enlargement basis with the funds requested for fiscal year 1955. That will still leave approximately 280 miles of levee work yet to be done.

Mr. RILEY. General, these levees that you propose to build are to be complete to the extent that they can withstand the flood for which they were designed?

General HARDIN. Mr. Riley, the work we propose to do with these funds is to increase the size of an existing levee, a levee which is already there, but which is inadequate in height to withstand the floods that we anticipate occurring in the future. It will then provide a structure that will conform to our standards of section, meaning width and slopes and height which we feel is necessary to provide full protection against the design flood.

Mr. RILEY. The piecemeal operations such as you have up and down the Mississippi River makes it rather difficult at times to put in these units so that they will withstand a heavy flood without the protection that the other units would afford; is that correct?

General HARDIN. Yes, sir.

The continuity of the levee line, of course, is the all-important thing in times of high water. If the levee breaks above you, it is just about as bad as if it breaks right in front of you, because the water immediately comes around behind and, therefore, we have since the

inception of this project, devoted our energies to raising the levees which were in the worst condition, and have gradually brought them all up to a point where the valley has been provided with an increasingly uniform degree of protection.

We have now remaining to do, as I say, about 280 miles to 300 miles of topping out of old levees to bring to a section and grade which we feel is the requirement of the project flood.

Mr. RILEY. The funds you have requested this year will complete 12 miles?

General HARDIN. Only 12 miles; yes, sir.

Mr. RILEY. Twelve miles of the several hundred miles; is that right?

General HARDIN. Yes, sir; of the 300 miles still remaining.

BANK STABILIZATION WORKS

Mr. DAVIS. We will resume this afternoon, General Hardin, with the discussion of the request before us of $18,775,000 for bank stabilization work on the main stem, and I will ask you to insert for the record a breakdown of the bank stabilization showing the mileage and the average cost. Can you do that?

General HARDIN. Yes, we have that mileage and the average cost tables.

(The information requested appears on p. 573.)

General HARDIN. In that connection, Mr. Chairman, I would like to comment on the average cost of this year's operations, if I may, for a moment.

We have provided the record with this statement under the head of "Levee." It is a combined statement for levees and revetments, but the 1954 fiscal year revetment program was conducted under very favorable low water conditions, and while we constructed 23 miles, approximately, the unit cost and average per square was somewhat more than in the preceding year, approximately $2 a square more. And in looking to the reasons why, we had to absorb under the 23-mile program this year as against 34- or 35-mile program the previous year, the mobilization and demobilization charges, but there has also been an increase in labor rates that have been applicable to the lower valley, and while we had as ideal conditions for placing revetment this year as we did in the previous year, our costs are slightly more for the reasons that I have indicated. It is now $38.94 a square for this year's work as against the previous year of $36.90 per square.

Mr. DAVIS. What do you mean by a square?

General HARDIN. It is 100 square feet—4 by 25 is the unit used.

MATMAKING BY MACHINERY

Mr. DAVIS. What advantage have you been able to gain in matmaking by the development and increased use of machinery for that purpose?

General HARDIN. The increased efficiency of all placing equipment, called the sinking plant, has contributed very definitely to the economy of putting this work on the banks of the river.

Since our 1950 program, just a few years ago, when the program had been approximately the same as we completed this year, 22 miles against the 23 miles in this year's program—we have decreased the

cost from $41.47 a square to the figure which I quoted a moment ago of $38.94, that is in the sinking operations.

The contributing factor, I think in all fairness to the contracting industry, have something to do with it. As you know, we are contracting for some of that work. We are leasing one of our sinking plants to the contractor, and we feel that their processes have benefited ours and ours have been in competition with theirs, so it has been mutually a profitable experience.

You ask about the increased savings due to machine making. I presume you are referring to the project which we have under development or actually under construction for mechanizing the manufacturing process of these mats.

We do not have that plant completed. It is in construction at Greenville, Miss., and we expect to have it, with all its equipment machinery installed during the coming spring It is not yet in operation.

Mr. DAVIS. Are you able to give us any estimate at all of the cost benefits that can be expected from the use of that method?

General HARDIN. Yes; we have made very careful cost estimates of what it is going to cost to operate that plant, and we justified the undertaking on the basis of something in the neighborhood of $1 per square saving through casting the mats by the machine method rather than the old methods that have been used in the past years. That is a planning figure, of course. One of the first things we expect to get into when we get this plant in operation, is to put in some test runs and develop cost figures on it. It may even need some adjustment. Of course, a thing as complicated as it is needs experience, and there may be some kinks develop in it and before it is fully developed I feel we should give it a severe test. In that way we can develop what the cost will be, but we are satisfied that it will be less than the present method.

MAPPING

Mr. DAVIS. We have before us a request for $200,000 for mapping, which appears to have become a fairly stable item. Briefly what is the mapping operation, General Hardin?

General HARDIN. This mapping operation is both to gather our field data and to actually revise the existing maps, to complete their topography, such as posting to date improvements involved in the construction of the project.

It also involves the actual making of some new maps. From the justifications you will note that since the inception of this project we have had as the objective the making of 253 of these quadrangle maps. We have completed 251 of them, and the work of revision on these maps is a continuous one. I do not anticipate that it will continue forever, but we do have need for bringing these maps up to date. I plan to use this $200,000 this year for revision of certain maps that are badly out of date and getting field data for the making of the 2 remaining maps. Those two remaining maps involved are in the St. Francis Basin and the upper reaches of the Yazoo which have never been mapped. It does involve the preparation of a series of maps, which the navigation industry uses on the Mississippi River, that shows the lights and the aids to navigation which the pilots are dependent upon.

MEMPHIS HARBOR

Mr. DAVIS. We have before us an item of $571,000 for the Memphis Harbor. Will you discuss that item, General?

General HARDIN. That item, Mr. Chairman, is for the continuation of a contract for the sewer. This amount will not permit any further work on the industrial fill which the current fiscal year did involve.

Mr. DAVIS. Have you been able to complete the sewers in accordance with the estimate that was presented to the committee last year?

Mr. ALDRIDGE. It should be about the same; we are still holding to the same estimate, $1,751,200.

Mr. DAVIS. It was increased $318,000 last year to that amount.

Mr. ALDRIDGE. That is correct, to that amount.

Mr. DAVIS. That is what you propose to do with the particular plans in the fiscal year 1955?

General HARDIN. Yes.

OFF-MAIN STEM

ST. FRANCIS BASIN

Mr. DAVIS. We come then to the second portion of the construction requested, the off-main-stem items, first of which is the St. Francis Basin, for which we have a request before us of $2,736,000. Will you review again the nature of the St. Francis Basin project, General Hardin, and tell us what you propose to do with the requested funds before us?

General HARDIN. Mr. Chairman, the St. Francis Basin project is in itself a comprehensive development which consists of a reservoir that is presently completed, the Wappapello, and it involves 277 miles of levee on both banks of the river from the reservoir down to the Poinsett County line in Arkansas. Then it involves approximately 76 miles of levees along the Little River, a tributary of the St. Francis.

Then there is a drainage district improvement in Dunklin County, Mo., the Elk Chute Drainage District where some 40 miles of protection levee work is involved.

To get back onto the main stem of the St. Francis, we have in the lower reaches, features where the channel is to be straightened and enlarged, involving a large amount of excavation, approximately 20 million yards, and building of levees adjacent to the enlarged channel.

Now, the authorization for this project as outlined in my remarks has not been completed, insofar as the authority to use an appropriation is concerned. On some of the channel work our efforts have been devoted at the moment to the improvement of the lower St. Francis River, and the building of levees adjacent to it.

The status of the project, as I stated, the Wappapello Dam and Reservoir is completed, and approximately 150 of the 277 miles of levees along the St. Francis River below the dam have been completed, and the 76 miles of the levees along Little River have been completed—that is not within this major drainage project, which was recently added to the undertaking.

We are presently engaged, as I say, in improving the St. Francis River downstream from the Poinsett-Cross County line, to be specific, the improvement is in the area from Madison to Marianna, and consists of the relocation of a channel and contiguous levees.

Our work for 1955 is to continue on that reach of channel improvement, being constructed with dredges, and the adjacent levee work, and also to do two pieces of levee in the vicinity of Paragould; one of them on the west bank of the St. Francis River in the vicinity of Bertis, Ark., and the other on the east bank at Macy, Ark. On the chart that is indicated in red.

Those two pieces of levee will make continuous the levee project in that immediate vicinity, that is to complete the work. That is the project downstream from the general vicinity of the reservoir area.

Mr. DAVIS. I note down here, General Hardin, at approximately west of the Arkabutla Reservoir there is a spot that is going to be tied down to some work that is now in process in the current fiscal year. Is that correct?

General HARDIN. I believe we have a more appropriate chart, Mr. Chairman.

Mr. DAVIS. I think this one will serve the purpose.

Last year we had some discussion with General Feringa about the benefit-to-cost ratio for the St. Francis Basin. He assured us that his successor would have something along that line in this year's presentation.

General HARDIN. Yes; we have a statement on that subject which is broken down into two parts. First the old project. The benefit-cost ratio of the old portion of this project is 2.8 to 1, the benefits being $3,600,000 as against an annual cost of $1,286,000.

The new project, which includes the backwater area, is computed to have a benefit-cost ratio of 2.06 to 1; the total adjusted benefits being $6,803,000 as against a total annual cost of $3,309,000. Those are based on the most recent estimates of cost and flood damage prevented. Would you like to have a copy of that for the record?

Mr. DAVIS. Yes.

(The information referred to follows:)

St. Francis River (old project)

Total flood damage prevented	$1,884,000
Total land enhancement	1,719,000
Total adjusted benefits	3,603,000
Total annual cost	1,286,000
Benefit-cost ratio	2.80

St. Francis Basin including backwater (new project)

Total flood damage prevented	$3,809,000
Total land enhancement	2,994,000
Total adjusted benefits	6,803,000
Total annual cost	3,309,000
Benefit-cost ratio	2.06

Mr. DAVIS. Has your local cooperation been satisfactory down there in recent years?

General HARDIN. Yes; we have overcome the obstacles that they were at one time experiencing in getting rights-of-way for the levee operations. I am not aware of any problems now that exist in getting local cooperation that is required.

Mr. DAVIS. The justifications indicate that the work to be completed during the fiscal year 1955 will bring this project to about 49 percent of completion?

General HARDIN. That is correct, Mr. Chairman.

LOWER WHITE RIVER BASIN

Mr. DAVIS. For the item, lower White River Basin, we have before us a request of $205,000. Will you tell us what is involved in that proposal, General?

General HARDIN. Although there are a number of separate items in the Lower White River projects, the only one for which we contemplate applying any funds to the work in fiscal year 1955 is the White River backwater levee.

That levee is at the intersecting of the White and the Mississippi and includes an area in the lower end of the Mississippi levee, main stem levee, protecting the White River Basin.

We expect to further the status of completion of that undertaking, which incidentally is for the purpose of providing protection to about 149,000 acres of agricultural and timberland, from the Mississippi and White River floods. The levee is admitted to serve as a safety valve and will store water under project flood conditions.

It is a project for the portection of that area without denying to the Mississippi River in its extreme critical stage the storage that originates in the backwater area, but in that degree of flood the project is still well justified.

Mr. DAVIS. That appears to be work that is tied in with some completed sections of the levee. Is that correct?

General HARDIN. That is correct, Mr. Chairman. That work has been going on for some time, and that total length of the levee in that project is 41 miles. The present status of the project is that 9 miles of the levee is completed, and 5.7 miles are under construction to project grade and section, and the remaining 26.3 miles of levee has been completed to an interim grade, a substantial grade, even though it is not the final one.

With the fiscal year 1954 funds the feature will be 69 percent complete, and with the proposed expenditure in 1955, it will bring the project to about 70.6 percent competion.

We expect to do about 3.3 miles of levee improvement along a reach constructed to the interim grade, bringing the levee to full grade and section for that stretch of about 3.3 miles.

There is some other work remaining, which is very urgent and would require flood fighting activities in time of flood, and we are very anxious to get as much of it as possible raised to grade in order to relieve the flood fight problem in an emergency.

Mr. DAVIS. Do you have a statement for the record as to the cost-benefit ratio on this project?

General HARDIN. Yes; the White River backwater area, which is one element of the White River project, lower White River, and the benefit-cost ratio is 4.36; the benefits are $1,805,000 per year as against a total annual cost, these are average figures, of $414,000.

(The statement referred to follows:)

White River backwater area

Total flood damage prevented	$1,075,000
Total land enhancement	730,000
Total adjusted benefits	1,805,000
Total annual cost	414,000
Benefit-cost ratio	4.36

LOWER ARKANSAS RIVER

Mr. DAVIS. The next item is $480,000 on the lower Arkansas River. Will you tell us the status of that program, General, please?

General HARDIN. The lower Arkansas River is broken into two parts: the north bank and the south bank. The north bank of the Arkansas River is a levee project, essentially, with some revetment protection contemplated to prevent retirement of the levee. It is primarily to protect against headwater floods on the Arkansas River, as influenced by the backwaters of the Mississippi, and consists of approximately 67 miles of levee enlargement, and realinement, extensions and some modifications to the drainage facilities.

On the south bank, the levee extends from Pine Bluff, Ark., to a junction with the Mississippi River levee below the mouth of the Arkansas, and for all intents and purposes are part of the Mississippi River levee, because the south bank levee protects that area of the Tensas Basin west of the Mississippi River from floods.

The project on the south bank of the Arkansas consists of about 85 miles of levee, and there are no drainage structures as there are in the north bank.

The north bank project is about 31 percent completed and has had a lower degree of priority than the south bank because the major Mississippi floods affect the south bank to a greater degree than they do the north.

About 16 miles, of a total of 67 miles, along the north bank are complete, whereas on the south bank there are 76 miles of a total of about 85 that are complete to project grade and section.

The north bank levee protects a large area in Arkansas, about 568,000 acres of land, of which about 300,000 acres are agriculturally developed land, and it also protects many communities.

The south bank protects a much larger area, approximately 3 million acres in Arkansas and Louisiana.

The funds for 1955 are proposed to be devoted entirely to the north bank, and we expect to use the money for about 4.6 miles of levee which at the present time is about 5 and 6 feet deficient in grade.

If we apply the funds in that fashion it will bring the north bank project to about 35 percent of completion.

Mr. DAVIS. That does not seem to quite tie in with some of the work you are doing this fiscal year, and that there is going to be some interval here. Is that right?

Mr. ALDRIDGE. There is one reach in there, Mr. Davis.

Mr. DAVIS. What is the reason for that?

General HARDIN. I do not know at what point the chairman is indicating on the map.

Mr. DAVIS. This indicates that the work you plan to do in this fiscal year 1955 to the north bank does not quite tie in with some of the work you are doing this year. There appears to be an intervening space remaining to be done in subsequent years.

General HARDIN. Oh, yes. That is in the vicinity of the area called Coopers Island. We could not continue that work there until we completed the negotiations for rights-of-way. We had to go to the next urgent plan for the 1955 season, where we are certain of not having any rights-of-way problems.

Mr. DAVIS. If you do run into a period of high water, the water might get in behind what you have already accomplished and damage what you are trying to do?

General HARDIN. That is very true. That always poses the problem of eliminating the emergency flood operations at the next place where we can continue.

Mr. DAVIS. Do you think it is worth while to work on this section when that could have some crippling results?

General HARDIN. I am satisfied that these problems will soon be resolved and we will be able to proceed with that in the very near future; I do not anticipate it will be a continuing problem at all.

Mr. DAVIS. Will you furnish us with a statement of the benefit and cost on this project?

General HARDIN. On the north bank—we furnish it separate from the benefits for the south. I do not believe we have it for the south bank. On the north bank of the Arkansas River the levee has a cost-benefit ratio of 2.68. The total adjusted benefits are $1,437,000. The annual cost, total, $537,000.

(The statement referred to follows:)

North bank Arkansas River levee, Arkansas

Total flood damage prevented	$517,000
Total land enhancement	920,000
Total adjusted benefits	1,437,000
Total annual cost	537,000
Benefit-cost ratio	2.68

Mr. DAVIS. How do you keep your levee and bank stabilization works on the Arkansas dovetailing with each other?

General HARDIN. Our levee work is planned to proceed on a basis of treatment to the most urgent places first, so as to minimize our flood-fighting problem. Our bank revetment work on the Arkansas, which we are prosecuting under the navigation project on the Arkansas, is definitely dovetailed into our levee system, in that we are trying to prevent the levee line from being encroached upon by the river. There is a levee, of course, along the Arkansas River. We are not building an entirely new levee and any place that the levee is encroached upon by the river is still a dangerous one, even though the old levee is the one that is endangered. So we are using the navigation project to provide us with the means of protecting against the destruction of the levee and at the same time trying to put the river in a pattern which will not be impossible to maintain. In other words, we are looking at the Arkansas as we do the Mississippi. It is not only to prevent the river from taking a course of action which will threaten the levee, but it is necessary to try to make that river behave in a pattern that it will

follow the work established by man. In other words, there may be a curvature you are trying to establish in a reach and it must not be a too abrupt curvature, otherwise, with all the efforts you can expend on it, you cannot hold it.

So we are applying the funds provided for stabilization of that river in its critical sections, both to hold the levee line, kept it from being disturbed, and also to establish a reasonable pattern for easing future maintenance. We are very definitely looking at them both together.

BOEUF AND TENSAS BASIN, ARK. AND LA.

Mr. DAVIS. The request for the Tensas River Basin is in the amount of $2,067,000. How are you getting along with the work down there?

General HARDIN. Quite successfully. We have had a good season on the Boeuf and Tensas, which is the present portion of the Tensas Basin project we are working upon and we are extending our work up the Boeuf River, having passed the intersection of Boeuf River and Bayou La Fourche.

The work that is planned for 1955 is those reaches which will take us from the present contract operations up to the Arkansas border and it is in that reach that we will be able to provide a channel for relieving impounded waters in the State of Arkansas, which have not yet been able to be let out through lack of natural or adequate channels of any kind. And it will be a real boon to the lower Arkansas area that has suffered for so long under impoundments, due to lack of adequate channels to permit the water to escape.

Mr. DAVIS. There are really two parts, then, to this Tensas Basin—the Red River backwater and then your separate levee program?

General HARDIN. That is correct. This is the upper portion of the Tensas Basin and we have under the same overall heading of "Tensas Basin," in the lower reaches, a Red River backwater levee and that levee will be completed with the sum which we are recommending for 1955, it being devoted to the correction of interior drainage and raising the levee in the vicinity of the Cocodrie structure at the lower end of the basin. That will complete the Red River backwater project.

Mr. DAVIS. When you say you expect to complete that levee up to Boeuf, to the State line, that is the channel enlargement?

General HARDIN. Yes, sir.

Mr. DAVIS. According to the chart here, that is just above at the State line?

General HARDIN. The funds which we are recommending for 1955 will extend the improvements to the State line and will get us into the area where there has been a long impoundment of water and natural lake area. It will bring that feature of the Boeuf-Tensas to about 49 percent completion. Presently, with the 1954 funds, 41 percent will be complete.

Mr. DAVIS. You will have completed the last of the Red River backwater as far as construction goes, then, with these funds of $340,000 you intend to apply there this year?

General HARDIN. Yes, sir.

Mr. DAVIS. There does appear to be a small stream there that you expect to apply some channel enlargement funds to at some later

date, but they would not compare in urgency with some of the other channel work in that area. Is that about it?

General HARDIN. That is correct.

Mr. DAVIS. Do you have a statement for the record of benefits to cost of this work?

General HARDIN. Yes, sir. The benefit-to-cost ratio for the Boeuf and Tensas Basin is 2.90. The benefits on an annual basis are $3,871,000 against a total annual cost of $1,338,000. The Red River backwater levee is separate from that statement. That has to do with the channel-improvement work in the upper reaches of the basin. The Red River backwater levee benefit-to-cost ratio is 3.05, the benefits being $1,527,000 against an annual cost of $501,000.

(The matter referred to follow:)

Boeuf and Tensas Basin, Ark. and La.

Total flood damage prevented	$461,000
Total land enhanced	3,410,000
Total adjusted benefits	3,871,000
Total annual cost	1,338,000
Benefit-to-cost ratio	2.90

Red River backwater levee, Louisiana

Total flood damage prevented	$381,000
Total land enhancement	1,146,000
Total adjusted benefits	1,527,000
Total annual cost	501,000
Benefit to cost ratio	3.05

Mr. DAVIS. Is the local cooperation satisfactory?

General HARDIN. Yes, sir.

YAZOO BASIN HEADWATER PROJECT, MISSISSIPPI

Mr. DAVIS. For the Yazoo River Basin we have before us a request for $908,000. That is getting over on the other side of the river, is it not?

General HARDIN. Yes, sir. That is the big basin which is north of Vicksburg and south of Memphis. That is the delta area of Mississippi, which I guess is one of the most active agricultural areas in the Mississippi Basin.

Mr. DAVIS. Is it essential as a cutoff there in order to confine the flow of the river and protect Yazoo City? Is that, generally speaking, the nature of that project?

General HARDIN. That is only one part of the many features of the overall Yazoo Basin project.

With the funds which are in this budget it was not possible to go beyond the one item of Yazoo City, which has been underway for some time. This $908,000 which is proposed for 1955 will be applied to the local protection project at Yazoo City and will bring the project to about 90 percent completion. It involves a cutoff which has been completed on the Yazoo River; it involves the construction of a pumping plant to get the water out of the leveed area, and a sanitary sewer and pumping plant at Yazoo City. The funds we propose will be applied to the floodwater pumping plant. The funds which are

presently available are for the purpose of completing the sanitary facilities.

This will cause to remain some levee work in connection with that Yazoo City project; $227,600 will remain to be requested after fiscal year 1955.

Mr. DAVIS. That is for the local protection project at Yazoo City?

General HARDIN. Yes, sir.

Mr. ALDRIDGE. We cannot complete that portion until we complete the storm pumping plant and sanitary sewer; in other words, we cannot spend the money until we complete the storm pumping plant.

Mr. DAVIS. You will anticipate requesting those funds for the 1956 fiscal year, will you?

General HARDIN. That is correct.

This is a very big undertaking here in the Yazoo Basin and the work which we have accomplished so far is a very substantial amount, of course, involving completion of four headwater reservoirs augmented by a number of downstream levees and channel improvements; a local protection project at Greenwood, then the one for Yazoo City; another one which has not been initiated at Belzoni. It also involves channel improvements in the lower reaches of the basin which have not been initiated as yet.

Mr. DAVIS. What are those four reservoirs you speak of that form a part of this project?

General HARDIN. Sardis, Enid, Grenada, and Arkabulta. Grenada is being finished now. The gates have been closed and impoundment started. All of the other three have been in operation and this past spring served admirably in one of the greatest runoffs in the basin's history, and reduced flood damages to a very great degree.

Mr. DAVIS. Is your benefit-to-cost figure on this an overall figure for the entire basin project?

General HARDIN. For the entire basin; yes, sir.

Mr. DAVIS. Will you give us a statement on this project for the record?

General HARDIN. Yes. The benefits-to-cost ratio is 2.61. The annual flood damages prevented are $2,229,000; the land enhancement is $18,046,000, giving total adjusted benefits of $20,275,000, as against a total annual cost of $7,769,000.

(The matter referred to follows:)

Yazoo Basin headwater project, Mississippi

Total flood damage prevented	$2,229,000
Total land enhancement	18,046,000
Total adjusted benefits	20,275,000
Total annual cost	7,769,000

Benefit-cost ratio, 2.61.

Mr. HAND. I do not get the land-enhancement values figured on an annual basis. How do you arrive at that?

General HARDIN. That comes about by changing the category of land use. In other words, land of intermittent and low-water use can be used in agriculture of a higher crop production, something in the nature of grains, or cotton, as opposed to intermittent agricul-

ture. It might even be—and I think it is in someplaces—lands which are undrained and have no crop value, growing hardwood, possibly, that will then become available for other land use and crops.

Mr. HAND. I can get, of course, the idea of the enhancement of the value of the land, but I have trouble on an annual basis.

General HARDIN. That is based on the crop yield.

Mr. HAND. Do you figure the crop value in that?

General HARDIN. The value of the crop yield.

Mr. HAND. There are a lot of other factors that go into that crop value beside protection from floods.

General HARDIN. Oh, yes. The cost of production enters into it, too.

Mr. HAND. Is that calculated in your figures of enhancement?

General HARDIN. Oh, yes.

Mr. HAND. The net result of what is made possible is contained in those figures?

General HARDIN. Yes.

Mr. HAND. It is a complicated sort of figuring.

General HARDIN. It is. We enlist assistance of the Department of Agriculture on those things and do not depend upon our own staff for it. It is a cross-check proposition.

ATCHAFALAYA RIVER BASIN

Mr. DAVIS. For the Atchafalaya Basin, we have a request for $3,175,000. This is a very important and interesting project. Will you bring us up to date on the progress of your work on the Atchafalaya, including the floodgate structure?

General HARDIN. Yes, sir. The Atchafalaya is a very important element of our overall plan for the control of floods in the lower Mississippi. It is the means of preventing the flooding of the lower reaches of the Mississippi Valley by the Old River, because the project contemplates that in time of extreme floods about half of the water coming down the Mississippi will be diverted through 3 means of diversion in the Atchafalaya basin; 1 through Morganza Floodway where there is a man-made structure at its head to control the floods' flow. The second is the Atchafalaya River itself which is leveed for some fifty-odd miles from its head through that basin. Then the third channel diversion is the West Atchafalaya Floodway which has at its head a fuse-plug levee that would be overtopped in time of extreme flood, all 3 of those flows being combined just below the end of the river levees and then being conducted out to the gulf through the lower end of the basin by 2 channels, 1 at Morgan City, a natural channel, and the other through a man-made channel called Wax Lake outlet, slightly to the west of Morgan City.

The project in the Atchafalaya Basin consists of levees, channel improvements, floodgates, locks, and drainage structures. And of the total of 448 miles of levee, all but about 45 miles have been constructed to the approved grade and section. The remaining 45 miles are in various stages. Not all of these miles are completely new levees. Some of them have not been raised to its final grade, because in that region it has a very deep swamp formation and you can only build

your levees so fast. If you build too fast, they subside and disappear; whereas, if you build at a reasonable rate and let them consolidate, then they strengthen their foundations and you can add successive lifts to bring them up to grade.

There are about 20 miles of levee in that category, where we have a levee but it has not yet been brought up to grade. That is north of Morgan City. We have other reaches, at the latitude of Morgan City, where there has been a single lift constructed and awaiting additional lifts.

Indicated on your map, I believe, east and west of the Wax Lake outlet, and south of Morgan City, there is some levee yet to be constructed.

The other structures that are important features of this project that I failed to mention are utility crossings, including railroad and highways. We are well along on those utility crossings and are presently involved in building the railroad crossing across the West Atchafalaya Floodway. It is called the N. O. T. & M. high level crossing. We have not yet started the highway crossing across that same floodway. The other features of these utility crossings are essentially complete. Rapides, Boeuf, and Cocodrie is another part of the Atchafalaya Basin on the upper left area of your map, which is south of Alexandria. That is a project for the improvement of impounded drainage in part, and part of it is natural drainage.

You see, when we built the protection levee on the west side of the basin, it was necessary to intercept some natural drainage and we have been engaged in remedying that situation by providing substitute channels. In a sense, the Rapides, Boeuf, and Cocodrie project was a part of that effort. It is now 79 percent completed. The entire basin project can be said to be about 85 percent complete.

In the fiscal year 1955 program, the $3,175,000 recommended will be applied in part to repay the $800,000, I mentioned earlier as having been borrowed from the Morganza structure. The reason for that borrowing, to refresh your memories since last year, was that the high level crossing of the roalroad had advanced faster than anticipated and funds were needed for that purpose, and borrowing from the Morganza structure was permissible because the construction of the highway fill not having advanced as fast as expected.

In addition to that repayment, we will continue this N. O. T. & M. high level crossing over the West Atchafalaya Floodway and the construction of the channel to the Bayou Boeuf lock in the vicinity of Morgan City. Also the construction of some of those deficient levees, raising them in their successive lifts, and some interior drainage and pumping plants in areas intercepted by levees in the vicinity of Morgan City.

Incidentally, of that sum of $3,175,000, we are proposing to expend approximately $225,000 for the engineering and planning of this Mississippi River diversion project.

Mr. DAVIS. What is the work on the Morganza structure that remains to be done which requires the repayment of the $800,000?

General HARDIN. The paving of the highway, which is on that big embankment on both sides of the control structure, and then the clearing in the forebay and channel below the structure into the basin. Also there is a front line levee that has to be degraded out on the Mississippi.

Mr. ALDRIDGE. We do not want to do that until we get the highway constructed at the higher level.

Mr. DAVIS. Have you had any serious problem of local cooperation in this area at all?

General HARDIN. No, sir.

LAKE PONTCHARTRAIN LEVEES

Mr. DAVIS. At Lake Pontchartrain, we have before us a request for $230,000 which is entirely for levee work, as I understand. Is that correct?

General HARDIN. Yes, sir. This Lake Pontchartarin flood-control project is advanced to a point where interim protection has been provided. That interim protection has been proven to be inadequate as a result of the hurricane of 1947 and this feature of the project, Mississippi River and tributary is to bring that project up to the authorized standard.

We have the side levees running perpendicular to the lake front completed and what remains is to bring the lakefront levee by successive lifts to its proper height and section.

This $230,000 will contribute to the raising of the lakeshore levee in part to the second lift stage. This is another levee that has to be raised in successive increments for the same reason that we have trouble in the Atchafalaya Basin. You cannot do it all at once, nor can you do it too fast. This will bring that feature to approximately 25 percent completion.

There remains additional levee height to be provided and offshore protection against lake waves in hurricane periods. This project is essentially to protect against hurricane floods brought about by high winds and backing up the water against the shore line.

Mr. DAVIS. It appears from the map we have that a portion of the lake front there is not included within the levee alinement. Is that correct?

General HARDIN. There is quite a lot of the lake front that is not within the levee alinement. It is a portion of Jefferson Parish that is within the protected area. There are portions of other parishes that are excluded, but this was as far as there was considered to be justification for the potentialities of development and apparent benefits to be obtained. This is an area where rapid advances are being made in providing residential developments. It is about the only area New Orleans has for expanding.

Mr. DAVIS. Do you have a statement on the benefits and costs in regard to this project?

General HARDIN. Yes, sir; the Lake Pontchartrain project has an annual value of flood damage prevented of $362,000; land enhancement of $371,000 on an annual basis; total adjusted benefits of $733,000, as against a total annual cost of $557,600, giving a benefit-cost-ratio of 1.31.

MAINTENANCE

Mr. DAVIS. We have the maintenance request, which amounts to $15 million before us, which is divided into 2 parts—the main stem of $13,210,000, and the off main stem, of $1,790,000.

Those figures compare with the request presented to us last year of $12.9 million, and $1.7 million.

What is the basis for this increased request?

General HARDIN. The total, of course, is approximately the same.

The estimation of the main stem is against the offmain steam maintenance, Mr. Chairman, is, frankly, an estimate at the best. We are so at the mercy of the action of forces of nature as to where our maintenance has to be placed, that at this time and until the end of the spring high water, we can only estimate with some degree of approximation where these sums are going to be expended. We know, of course, that there are certain structures and certain fixed things that are going to require a repetitive amount of maintenance after some years of experience, but it is difficult for us to say with precision where the revetments are going to have to be maintained to restore them to their original condition, or where a levee would have to be set back in order to keep the line secure, because if the banks are not reveted, a good bit can happen in one high water.

So, this estimate of main stem money for $13,210,000, for all flood purposes, is a form of repetition of our previous estimate.

I can give you a further breakdown, which may give you some insight into the variation between last year and this year, and I will be glad to insert that into the record.

Mr. DAVIS. I think that will be helpful if you would insert that in the record, recognizing, as we must, that this can be no more than tentative.

General HARDIN. Yes, sir.

(The information requested is as follows:)

Breakdown of tentative maintenance program, fiscal year 1955

Main stem:	
Mississippi River levees	$3,125,000
Bank stabilization works	5,030,000
Dredging	4,100,000
Surveys, gages, and observations	775,000
Bonnet Carre Spillway	100,000
Morganza structure	80,000
Subtotal, main stem	13,210,000
Off main stem:	
St. Francis Basin	175,000
Lower White River	25,000
Lower Arkansas River	100,000
Red River backwater levee	45,000
Yazoo River Basin	885,000
Lower Red River	140,000
Atchafalaya River Basin	420,000
Subtotal, off main stem	1,790,000
Total, maintenance	15,000,000

BONNET CARRE SPILLWAY

Mr. DAVIS. Last year General Feringa, I believe, mentioned the rather significant maintenance problem that is developing at Bonnet Carre, and I wonder if you can tell us a little about that at this time?

General HARDIN. Yes, sir.

The Bonnet Carre spillway was originally designed to not require—or originally conceived, I should say—not to require clearing of the timber growth in the spillway proper—in the borrow pits, so-called—that had been used to construct the levees on either side of the spillway, would be adequate to conduct the release of flood flows into the lake, and it would not be necessary to clear the spillway.

We have had now 3 experiences in the utilization of the spillway. The 2 previous ones had shown some indications that, as this timber growth became more dense, in spite of the maintenance efforts to clear the lower portions of the growth with animals, nonetheless, did silt up to some degree. In the last runout, the 1950 flood, there was every indication that we should clear the area, and not have these silt-laden waters filtered by this tree growth and cause deposition.

At some places the deposition is rather excessive. I have seen some of it 12 to 15 feet high, where it piled up in great sand waves.

Now that we have used funds for the purpose of removing this excessive tree growth, I am not concerned about the further siltation of that spillway.

As a matter of fact, I think that the spillway, if it develops, as there was an indication in one of the runouts, to cause localized scour, we may at some time in the future be confronted with means of preventing scour rather than being worried about the spillway filling up, and if the worst did happen and there was further accretion formed in the spillway, to me it would not be a problem of any serious magnitude, to put a hydraulic dredge in there and open it up again.

I do believe from every standpoint that this clearing will have alleviated this situation problem to the point where I think there will be no continuing problem as long as we keep the tree growth from coming back.

We have learned a good bit from the Bonnet Carre experience in that I think there were some diversions of the bed-load material into Bonnet Carre rather than just the siltation and suspension.

In the Morganza Floodway, I think we have profited by what we have learned from the Bonnet Carre, and propose to take remedial steps in advance to prevent excessive siltation. I do not share any of the views that Bonnet Carre, if it is used a few more times, will fill up and become useless. I do not see that at all.

Mr. DAVIS. I think it is certainly true that this entire project or group of projects is something that really has to be seen in order to be understood and appreciated. I know from some of the statements which you have made that you share the feeling of gratification that I have. Some of the members of the subcommittee were able to see some of your works and some of your problems since the hearings last year, and I hope that before too many appearances before this subcommittee that every member will have had an opportunity to see the works in this area, so that they will be able to visualize the things we are talking about when you come before us in subsequent years. We certainly want to wish you well in this important responsibility that you have.

General HARDIN. Thank you very much, Mr. Chairman.

THURSDAY, JANUARY 28, 1954.

MISSOURI RIVER BASIN

WITNESSES

BRIG. GEN. WILLIAM E. POTTER, DIVISION ENGINEER, MISSOURI RIVER DIVISION
WENDELL JOHNSON, CHIEF, ENGINEERING DIVISION, MISSOURI RIVER DIVISION
HARRY COHEN, ASSISTANT CHIEF, PROGRAM DEVELOPMENT BRANCH, OFFICE, CHIEF OF ENGINEERS

Mr. DAVIS. The subcommittee will resume this morning with a discussion of the various projects of the Corps of Engineers in the Missouri River Basin.

We are very pleased to again have with us Brigadier General Potter, division engineer of the Missouri River Division, and Wendell Johnson, Chief of the Engineering Division, and we look forward, General Potter, to your always interesting and enthusiastic report on the progress made on the problems that we do have in the Misssouri Basin. We will ask you to get the discussion underway in your own fashion.

GENERAL STATEMENT

General POTTER. Mr. Chairman and members of the committee: It is indeed a pleasure to be back here, and since so many members of the committee were out looking at the works last year, my job of explanation is considerably reduced.

I do not have a prepared statement, but would like only to mention some highlights of the basin this year.

The first thing of importance that I would like to bring to your attention is the Montana flood of May and June on the Sun River which caused about $10 million worth of damage to Great Falls and other localities. About 100,000 acres were flooded and 2,000 acres were eroded away in the banks of that stream and others.

As soon as the flood started, the Fort Peck District mobilized under emergency plans that had been worked out in advance, established their flood-fighting center in Great Falls, and later, as the flood moved downstream, to Havre, Glasgow, and other places. They fought the flood in company with the local people, who reacted to the emergency in a great way. Then, as the flood started to recede, the district set up disaster relief centers at the request of Gov. Val Petersen's civil defense organization. These centers were immediately turned over to that organization when they were mobilized to work. All expenses having to do with the disaster relief phase were met by funds other than ours. As a result of the flood, a survey investigation previously authorized by Congress is now actively underway. We are working in close coordination with the Bureau of Reclamation on this survey, and it should be completed in fiscal year 1955.

The flood brought strongly to the minds of the people downstream the great benefits that accrue from flood-control reservoirs. I would like to give you a few figures.

The flow of the river into Fort Peck was 120,000 cubic feet per second at the peak of the flood on the Missouri River. Due to the flow

condition downstream, we reduced the outflow at Fort Peck to 3,000 cubic feet per second. Three and five-tenths million acre-feet of water were stored in the reservoir and some thirteen million dollars worth of damage was prevented downstream. By storing that 3.5 million acre-feet in Fort Peck during the flood season, we were able to keep the flows on the Missouri River below Sioux City at a steady rate all summer; 70 percent of the water at Kansas City, and 45 percent of the water at St. Louis came out of Fort Peck during a period this fall when it was vital that the river stage be kept high. During this period, the reverse picture at Fort Peck took place; 3,000 second-feet came in to Fort Peck and we released up to 2,000 second-feet in order to keep the required 35,000 second-feet at Kansas City.

The second highlight is the Floyd River flood. Floyd River is a relatively small river that runs through Sioux City. On the night of June 8, 11 inches of rainfall fell in that small basin. The river rose precipitously and 90,000 cubic feet a second went down through the channel which had been built by the local people in WPA days to a capacity of 26,000 second-feet. I am not impugning the planned capacity, because the available records indicated that was sufficient; $26 million worth of damage was done overnight; 10 lives were lost; 45,000 acres were flooded. Of the $26 million of damage, $1 million occurred to farmland. An already authorized survey investigation was funded and we are now working closely with the Department of Agriculture to work out plans that might reduce the potential damages in the future. It is a difficult little valley to plan, because of the flat slopes and it is difficult to find suitable impoundment sites.

The highlight of the basin during the summer and fall has been the drought. There may be a few exceptions to this next statement, but it is largely true. Due to the impoundment and regulation of floodwaters in the Missouri River, it was about the only river in the Midwest and West which operated at a good flow all summer long. The situation in the drought became so serious that little towns such as Ottawa, Kans., made plans to bring water from Missouri 70 miles to their town in order to keep them going. The Marais des Cynes River was almost completely dry. At that time we were passing 35,000 cubic feet per second past Kansas City, which was sufficient for all needs. At the same time the Kansas River got down to as low as 600 cubic feet per second; 600 cubic feet per second is an amount of water sufficient to keep the industries going along that basin, but it is grossly insufficient to take care of pollution and maintain a steady flow.

There are three reservoirs in the Kansas Basin which are completed already, Kanopolis and Harlan County by the Corps of Engineers, and Cedar Bluff by the Bureau of Reclamation. As an example the reservoir at Kanopolis was operated to release 50 second-feet all summer. The powerplant at Salina demands 33 second-feet to keep going and, if it was not kept going, the town would have been without electricity because of a lack of cooling water. And without Kanopolis there would have been periods as long as 2 weeks when that powerplant would have been operated at a considerably reduced output.

These reservoirs, as you gentlemen know, were authorized on a flood-control basis. But I can assure you that the operation of those reser-

voirs this summer which reduced the threat of drought along the whole Missouri River, has received much more kudos than any flood control operation in the past has done.

We are in the position now of developing what we call our reservoir regulation center. As you know, Fort Randall is closed and at the present time we have 1.5 million acre-feet of water impounded. That brings us up to the bottom of the power pool. We have almost 13 million acre-feet in Fort Peck. Garrison is closed and after July of this year we propose to start storing the first 5 million acre-feet in that reservoir. The integrated operation of those reservoirs to react to all situations demands forward planning and in Mr. Wendell Johnson's office we have set up this reservoir regulation center to prepare plans for the operation of the system for the next year.

We gathered the data in the early spring of this past year. An initial meeting was held with all other Federal agencies concerned and a representative from each State in the basis. The proposed plan of operation of the reservoirs was explained; we went into the details of the States' demands for water; the data was taken home and studied; and in the final meeting of this group in August 1953, a reservoir operation plan under minimum water conditions, average water conditions and maximum water conditions was established. This is not a one-sided operation on the part of the corps. The interagency representatives included all of the States and everybody's interest was considered for the discharge of the water during the coming year.

The next highlight is our navigation season. As you know, the Federal Barge Line was sold this year and has been bought by private industry under stipulations which requires a certain number of trips up the Missouri each year. They have established that organization on a going basis, and I understand it is quite well funded.

The Sioux City and New Orleans Barge Line got into operation this year and made many round trips. They have built equipment for the Missouri River and they now have 2 towboats and 18 barges. They plan, during this next year, to construct 1 or 2 more towboats and up to around 36 barges. They will have a total private investment at that time of something over $4 million. They will move their main offices from Texas to Kansas City and already have representatives there.

In a talk before the interagency committee yesterday, the president of that firm said it is not a problem of looking for traffic; it is a problem of getting unloading facilities along the river to take care of the traffic as it develops.

In addition to those 2 operators, 3 contract carriers operated on the river and at the end of the navigation season over 150,000 tons of purely commercial traffic had been moved. That included 1 million pounds of sugar to Omaha, I might say. I think with the improved control that we now have of the Missouri, the operation of private navigation on that river will be successful, and the words of this hard-headed businessman yesterday indicated to me that there is a lot of push in back of the development.

As to the fiscal features of the Division, I would like to show the committee one chart of the many we keep in our office on the management of funds.

For unobligated funds: On June 30, 1953, we had $15.5 million; on December 31, 1953, we had $23 million, and by June 30, 1954, our unobligated funds will be between zero and $5 million.

For our expenditures: On June 30, 1953, we had $67.9 million; on December 31, 1953, $67.2 million; and on June 30, 1954, our estimate is we will have $24.6 million.

The main point I would like to bring out to the committee with respect to the chart is how closely to the predicted or scheduled obligations and expenditures the actual obligations and expenditures are.

Ever since I have been engaged in this work I have been vitally interested in the business management of the operation. I have felt for many years that an organization that has responsibility for expending up to $500 million a year plus should be run on business principles, and that the duty of the higher people in the organization is the business management. If that business management can save 1 percent it has saved a lot of money. Now, I cannot show to the committee large savings this year, but I would like to give you some examples of how our business management has operated.

At Fort Peck, for the fiscal years 1949 to 1952, we reduced personnel from 407 to 223. That reduction was because of the lessening of the workload, but it does indicate there was an appreciation of the fact that people had to go when work fell off, rather than feeling that they had to be protected in their positions, no matter what the workload was. In 1953, we went from 223 to 141 in our strength. We reduced administrative and engineering cost from 1952 to 1953 by $163,000.

The district now is engaged largely in operation and maintenance of the project, flood fighting, working with the Bureau of Reclamation in establishing flood-control regulations for their reservoirs, and assistance in planning of the second powerplant at Fort Peck.

At the Garrison district, we accomplished a saving of $20,000 this past year by reorganization of the Construction Division. With fewer people we are doing the same job of inspection and operation of contracts under a greater workload this year than we had last. We have consolidated the district headquarters and have moved out of Fort Lincoln at a saving next year of $68,000. We have consolidated the fire and police departments at a saving of $28,900, and made other changes and improvements to effect savings of $47,500. The total savings in that district under a greater work load will be about $164,400.

In the Omaha district we have reduced personnel 9 percent.

At Fort Randall project, which is under the Omaha district, we have reduced personnel from 291 employees to 186 employees, with as great a workload as we had before moneywise but not areawise. Some of that is due to the fact the operations do not cover as much of an area as before.

In the Kansas City district, due to a much less workload than we had in the past, we reduced from 1,252 in November of 1952 to 939 in November 1953.

We reduced personnel in Harlan County by 4 employees and reduced the Kanopolis staff by 7 employees. Those are not large amounts of money but are indications of the active management program we maintain in the division.

I believe that finishes my general statement, sir.

AUTHORIZATIONS AND APPROPRIATIONS

Mr. DAVIS. That was a very interesting statement and a very encouraging one to the members of the subcommittee.

Now, General, bring us up to date on the overall authorization and appropriations picture in the basin, please.

General POTTER. The monetary authorization for the Missouri Basin projects at the present time is $616 million. Appropriations through the fiscal year 1954 will have amounted to $517,033,800. If the appropriation for fiscal year 1955 is passed approximately as the budget shows, our remaining balance of the authorization will be in the neighborhood of $35 million.

Mr. DAVIS. Now what is happening in your planning in that respect? Are there other authorizations that you are seeking, or are working on in the basin?

General POTTER. I would like to ask Mr. Cohen to go into that, as it pertains to future authorizations.

Mr. COHEN. As General Chorpening indicated the other day to the committee, we are now discussing with the Public Works Committee the matter of an omnibus bill, and basins such as Missouri may be considered at that time.

Mr. DAVIS. As of this time, then, you are not able to give us any indication as to the magnitude of the requested authorization for the Missouri Basin?

Mr. COHEN. No, sir; I am not.

Mr. RILEY. Could you say what would be included in the request? Would it be for the further construction of dams, or the stabilization of the banks of the river, or just what would be the nature of the request? Could you tell us that?

Mr. COHEN. The basin authorization covers generally the dams General Potter has discussed. The navigation project is completely authorized. In other words, there is no monetary ceiling on the authorization for the navigation project.

TOTAL COST OF PROJECTED PROGRAM

Mr. DAVIS. Last year you furnished us with information of the total cost of the projected program in the basin. Has information similar to that which appeared on page 601 of our hearings last year been brought up to date?

General POTTER. I have that data ready to give to the committee.

(The matter referred to follows:)

Total cost of projected program of the Corps of Engineers in the Missouri River Basin

Item	Federal cost	Non-Federal cost	Total cost
Total authorized program: [1]			
Projects authorized prior to 1944	$730, 730, 600	$7, 900, 600	$738, 631, 200
Projects authorized in 1944 Flood Control Act	1, 174, 439, 800	12, 271, 900	1, 186, 711, 700
Projects authorized after 1944	81, 997, 300	6, 072, 700	88, 070, 000
Total	1, 987, 167, 700	26, 245, 200	2, 013, 412, 900
Projects recommended to Congress: [2]			
Kansas River	61, 300, 000	1, 348, 000	62, 648, 000
Osage River	219, 414, 000	400, 000	219, 814, 000
Other	19, 824, 300	8, 000	19, 832, 300
Total	300, 538, 300	1, 756, 000	302, 294, 300
Projects favorably recommended by the division engineer [3]	45, 227, 000	6, 556, 500	51, 783, 500
Projects planned for Grand and Gasconade Rivers [4]	286, 327, 000	1, 999, 000	288, 326, 000
Additional proposed projects	264, 088, 000	5, 381, 500	269, 469, 500
Grand total	2, 883, 348, 000	41, 938, 200	2, 925, 286, 200

[1] Excludes authorized projects costing $276,083,900 to be replaced by projects recommended or planned.
[2] Includes projects replacing authorized projects having a total cost of $145,516,900.
[3] Includes projects replacing authorized projects having a total cost of $5,920,000.
[4] Includes projects replacing authorized projects having a total cost of $124,647,000.

General POTTER. I would like to call the committee's attention to the fact that the present cost of the plan authorized by the 1944 Flood Control Act is approximately the same as the original cost at the time authorized increased by the cost index rise. There are many rumors, as you know, that the cost of the plan is greatly in excess of original figures. These rumors are not correct.

INTERAGENCY COMMITTEE

Mr. DAVIS. There are a number of other Federal agencies involved in the entire Missouri Basin picture and I wonder if you could discuss with us, for a few minutes, the matter of coordination of the work of the Corps, the Department of the Interior, the Department of Agriculture and the Missouri Basin Interagency Committee, in order that we may get the picture of how they do fit together.

General POTTER. Yes, sir. If I may take up first the interagency committee, I have been very proud of its operation this year. We have had an excellent attendance from all of the States and, of course, from all of the Federal agencies. We have attacked problems that are really problems of the future. For instance, we have produced a power study of the basin and the interrelationship of that power with the future demands. As an example, it clearly showed that the Federal power to be produced in that basin will be but a relatively small part of the power demands of the basin in 1975. And it clearly pointed the way, I believe, to the plans that private power must make in order to meet their duty in the basin. And I think I can assure the committee that the private power companies in that basin do see their duty and what they are going to have to do. It is a very live organization, or group of organizations.

The interagency committee, in collaboration with the Missouri River States Committee, which I shall describe later, has attacked problems such as a compact and in a meeting in Topeka last month it was proposed to set up a compact formulation group, including

Federal representatives. There are before the Congress, due to these activities, 2 or 3 bills at the present time proposing that Congress authorize such a group. The bills differ in concept, but generally have the idea of authorizing or legalizing an arrangement such as the Missouri Basin Interagency Committee.

The formulation of the reservoir regulation center in our office is really an interagency task and I feel I can report to the committee that the interagency committee and its working staffs from the various agencies is a real live organization and is accepted by the people of the basin. As to our relationships with other Government agencies——

Mr. HAND. May I interrupt to ask would it be convenient at this point to have just a brief statement as to the composition of this interagency committee?

General POTTER. The interagency commitee is composed of the Corps of Engineers—I am the official representative from the corps; the Department of Interior, one representative, who represents all of the many agencies of that Department; the Departments of Agriculture, Public Health, Commerce, represented generally by the Weather Bureau; the Labor Department represented by the Kansas City representative, whose main task is security of employment, I believe; and the Federal Power Commission through its regional office in Chicago. The States are represented by the Governor or his selected deputy, who is generally the man in charge of resources development within the State. They are generally people who have spent a large part of their lives in the development of water resources in their State.

There is another organization in the Missouri Basin which is called the Missouri Power States Committee, which is made up of the Governor and two other representatives of each State. They generally meet once a year, although they are going to meet at least twice this year. They elect a chairman. At the present time it is the Governor of South Dakota, Governor Sigurd Anderson. That is the organization that is working on the proposed compact that will be further studied this year.

Mr. HAND. Are the States in both organizations identical?

General POTTER. Yes, sir.

Mr. HAND. Will you name them for the record?

General POTTER. The States consist of Missouri, Kansas, Colorado, Nebraska, Iowa, North and South Dakota, Montana, Wyoming, and Minnesota—10 of them.

Mr. CANNON. What was the liaison between the Interagency Committee and the Missouri River Basin Commission appointed by the President last year?

General POTTER. That committee was headed by Mr. Lawrence, as you know, from Lincoln.

Mr. CANNON. Was he also a member of the Interagency Committee?

General POTTER. No, sir. He was selected by President Truman. He headed that committee and there were 9 other members, I believe, 1 from each State. But the membership that made the study of that Commission did not include any members of the Interagency Committee.

Mr. CANNON. Did the two cooperate and, if so, to what extent?

General POTTER. Mr. Lawrence's committee held meetings all over the basin and I believe in each State the governor or his selected representative was the key testifier before that committee. In addition, the committee had testimony from interested local people. I think there were some 20 meetings held over the basin. I must say they really covered the basin.

Mr. CANNON. Is there any conflict in activities or any duplication of the work of the two?

General POTTER. The task of that committee was to come up with recommendations as to how the basin should be developed, to recommend whether the works now going in were in their opinion unjustified for the Government to do; to recommend a change of the emphasis on anything having to do with the development of the resources in the basin as they saw it. And they did not hesitate to recommend.

Mr. CANNON. Its jurisdiction expired on the filing of the report?

General POTTER. Yes, sir. The committee is no longer in existence.

Our relationship with the other agencies I would describe as good to excellent. We work very closely with the Bureau of Reclamation in the upper basin and, in the development of the operational plans of their reservoirs for flood-control operations, there is nothing that is lacking.

At the field level, Mr. Johnson and his associates in their design and engineering in the Fort Peck, Garrison, Omaha, and Kansas City districts call in and talk to the representatives of that agency frequently. They also hold a number of sub-Interagency Committee meetings.

We report every month to the Interagency Committee all important meetings that have taken place between the agencies and the list turned in is generally in the neighborhood of 30 to 50. I would classify the coordination as active and fruitful.

In our relationship with the Department of Agriculture, due to the fact the pilot-plant bill, the so-called Hope-Andersen-Carlson amendment, is just getting under way this year—coordination consists largely of reviews of reports. About 6 of their reports on those pilot watersheds, some 18 of which exist in the Missouri Basin have been reviewed.

I believe that our intimate coordination with agriculture on the plans that may come up during the next year will be somewhat in the nature of a training period. The coordination has not been good in the past; but, if we will recollect back to the days when there was the so-called disagreement between the Corps of Engineers and the Bureau of Reclamation, we have learned that they are humans and they have learned to accept that we are, and the day may come when a similar situation will exist between us and the Department of Agriculture.

SALT-WAHOO BASIN

Mr. DAVIS. Specifically on that point, what can you tell us about this Salt-Wahoo situation?

General POTTER. The Corps of Engineers and the Department of Agriculture have both completed investigations of the Salt-Wahoo Basin and have independently developed separate plans of improvement for that basin. Some limited coordination in planning was accomplished in the investigations phase and an attempt is now being made at the Washington level to coordinate the reports.

The Department of Agriculture plan was submitted to Congress in 1952 and is now before the Committee on Agriculture. The plan consists of 2 parts, 1 relating to land-treatment measures and the other relating to waterway-stabilization measures including 165 small reservoirs primarily for flood control. The land-treatment portion of the plan includes such measures as contour plowing, terracing, crop rotation, fertilizing, and so forth. This part of the program is estimated by the Department of Agriculture to have a Federal cost of $13,906,200, and to produce annual benefits of $7,135,800. There is no conflict between this part of the agriculture program and the program of the corps described below and the two programs could be planned and built entirely independently. The waterways-stabilization portion of the agriculture plan includes measures such as channel improvement, drop structures, and 165 small reservoirs. This part of the program is estimated by the Department of Agriculture to have a Federal cost of $6,207,000, and to produce annual benefits of $1,012,000. Some of the 165 reservoirs do conflict in part with the plan developed by the Corps of Engineers.

The Corps of Engineers plan for the basin is now before the office, Chief of Engineers, for review. It provides for 17 small reservoirs integrated with channel and levee improvements downstream which will provide a relatively high degree of flood protection to Lincoln, Ashland, and a number of smaller communities, agriculture lands, and transportation facilities. The Federal cost of the plan is estimated at $12,410,500 and the annual benefit at $660,400.

Although neither of these plans has been authorized by Congress, the Department of Agriculture has initiated construction of a substantial part of its plan under the so-called pilot plant watershed program approved in the fiscal year 1954 appropriation act. It is understood that the area of the pilot plant in the Salt Wahoo Basin is the largest in the country. If this program is completed as now planned, it may not be economically feasible to provide the larger reservoirs which the corps considers are necessary to adequately protect Lincoln and the lower valley from major floods.

FORT PECK DAM

Mr. DAVIS. Now you mentioned the rather dramatic effectiveness of the Fort Peck Dam with respect to the control of the water of the Missouri during the course of the last summer. What kind of a fall and winter have they had out there in the plains and mountains? Has it continued to be very dry, with very little snow, or have you had a considerable amount of potential spring runoff?

General POTTER. As of now, next year does not look good as to water. Snow on the plains and mountains is rather lacking. There has been no precipitation of any extent in the lower basin. At Jefferson City yesterday they had a sleet storm and they said that was the first water they had this year. The farm ponds are mostly dry; there is not much snow on the mountains and unless we have a good February and March we are going to be looking at each gallon of water with a good deal of interest.

Mr. DAVIS. When you said it is not good, you mean it is not good from the overall water supply in the basin; but from the standpoint

of the threat of spring floods, or something of that kind, it appears to be a rather safe situation this spring?

General POTTER. As far as the snow-runoff flood is concerned, it does not look bad at all now. But the committee well remembers how green North and South Dakota were when you were up there. That was unusual and it might be that the weather cycle is such that we will have considerable spring snow and rain in the northern basin. We would not especially mind some, because we do need 5 million acre-feet for Garrison after July.

SEDIMENTATION STUDIES

Mr. DAVIS. Last year you told us a little about a Board that had been set up to make silting and sedimentation studies. Have there been any interesting or significant results from the work of that Board in the past year?

General POTTER. The Board is still working. The Board held a meeting last summer on the main subject of the lower river, and has been working very closely with us on the aggradation studies on the upper river above Garrison. Last month the Board signed a statement of their concurrence in the aggradation studies around Williston.

We are very proud of the gentlemen who do work with us and they are quite proud to be on the board which is going into such an important and relatively new field.

FLOOD CONTROL EFFECTIVENESS OF PRESENT DAMS

Mr. DAVIS. One of the matters of our discussion last year had to do with the effectiveness of the entire system of main stem dams in controlling the future flood hazard of the Missouri River and to a less degree the Mississippi River. You gave us the illustration of the effect of Fort Peck. What can you tell us about your anticipated effect of the series of main stem dams on this lower valley flooding, both present and future?

General POTTER. I would like to show the committee a chart which was developed for my presentation at Topeka last month on the subject about which the chairman is asking, that is, the effectiveness of the basin reservoirs. This picture shows the Omaha levee. It shows a line well above the top of the levee where the 1952 flood would have reached if it had not been for Fort Peck. On top of that levee are shown several feet of sandbags and flashboards.

There is another line which shows the position that same flood would have if it happened this next spring. You can see it is well below the design level of the levee. The levee was designed to take care of the highest possible flood that could happen below the main-stem reservoirs. There is a further line well down within the banks of the river which shows how high that flood would have been had it happened after all of the main stem reservoirs were completed.

To put it broadly, the flood came past at about 400,000 feet per second. When the upstream reservoirs are finished, it would go past Omaha at 70,000 cubic feet per second—twice the flow this summer.

I might add for the record the people who are on our Sedimentation Board. Dr. H. A. Einstein; Mr. Gale Hathaway, Special Assistant to the Chief of Engineers, formerly president of the American

Society of Civil Engineers; Mr. Emery W. Lane; Mr. Thomas H. Means; Dr. Lorenz G. Straub, and Dr. V. A. VanRoni.

LOCAL COOPERATION

Mr. DAVIS. We have had quite large and quite enthusiastic delegations from this area who were present before the subcommittee, now in every year, certainly in the years of experience on this committee. Do you get the same kind of enthusiasm with respect to local cooperation on the spot?

General POTTER. Yes, sir. In fact with respect to certain situations in the valley, I expect that you are going to have representation from certain areas both for and against some projects. I would say that the feeling with respect to Oahe, which I described last year has not arisen to anywhere near the extent it was last year, although there have been a couple of meetings in opposition to the project. However, the entire State, and the Governor, are thoroughly behind it.

Mr. DAVIS. What are the usual types of local participation and cooperation that you require and receive in this connection?

General POTTER. The local participation generally is found in local protection works such as those in Kansas Citys, Omaha, Havre, and so on.

In those areas the people do furnish the rights-of-way, and that includes the bottom areas, the relocation of facilities, for which they are responsible and they do maintain and operate the completed works.

There is another type of participation which is not generally recognized as such, that being with respect to navigation projects. Each of the larger cities have a municipal dock, and the Kansas Citys have a municipal warehouse. The president of the Sioux City-New Orleans Barge Line indicated to me that the construction of further warehouses is assured as the traffic develops.

It would please the committee, I believe, to know how the small towns, like Havre, whose population is not large and whose financial resources are not large, have been willing to, with an overwhelming vote, pass the bond issue to buy the rights-of-way necessary for the construction of their levees.

The problem is not to work up enthusiasm for this participation, but to hold it down to within the limits of the budget we can submit. Of course, with respect to large reservoirs, there is no local participation.

Mr. DAVIS. In that connection, if I bought a house in a housing project, located down in a flood plain, I would vote for somebody to come in and give me help to protect it too.

POWER SCHEDULES

This overall program which you are presenting to the committee today and tomorrow, does contemplate some delay in the schedules of construction and in connection with the scheduling of power available from the main stem dams.

General POTTER. For reservoirs, such as Gavins Point, we already have delayed it 6 months.

For reservoirs such as Oahe, where of course we are in the first initial stages, we have already delayed that 1 year, and I believe a second year delay is a possibility.

With respect to Fort Randall the first power will go on the line in March.

With respect to Garrison, power is scheduled for April but due, not to lack of funds, but to construction difficulties this winter it might be necessary to delay that 1 or 2 months.

Of course, as the committee knows, there is no projected date as to Big Bend.

KANSAS CITY PROJECT

Mr. DAVIS. Getting down to the river, and to the place where some of the members of the committee started their trip last year, what can you tell us about the progress of the work at Kansas City?

General POTTER. The Kansas City project is not in the current budget, you know.

There are still some unobligated balances and consequently unexpended balances.

Work is underway on two major bridge projects, which must have the abutments moved inland to provide for greater waterway space, and are still negotiating as to the building of lower Armourdale unit as local interests want it, and which we recommended as against the way it was originally authorized. I believe I described that last year to the committee. But to refresh our memory, our original plan provided for a levee and floodwall. They propose to raise the railroad bridge and adjacent tracks and other facilities so that a levee and floodwall will not be required. The agreement that has been reached with the local people involves Federal financing of their plan to the extent that our original plan would have cost with local interests bearing the additional amount.

The Office of the Chief feels that the committee should know that this transfer of funds is contemplated, that the bill should recognize that this transfer would not cost the Government any more, but rather would result in a facility that we feel would be better since the bridge raise would be permanent, and could be used all during times of flood and permit traffic between Kansas City, Kans., and Kansas City, Mo.

I believe that the local interests plan to present a statement relative to the inclusion in the appropriation bill of language to authorize such a transfer of funds.

Mr. DAVIS. So you really cannot give any assurance of being able to proceed with that portion of the Kansas City project during the fiscal year 1955?

General POTTER. Oh, yes; I believe that will go ahead. I told you last year that I thought it would go ahead then, and I think it would have, but when the agreement was presented to the Office of the Chief of Engineers, they felt that there should be some specific mention of it by committee in the bill.

Mr. DAVIS. There are funds, unobligated, that will permit you to go ahead with it?

General POTTER. Yes.

Mr. DAVIS. So you can proceed with that project during the 1955 fiscal year?

General POTTER. Yes. The unobligated balance on June 30, 1953, was $6,500,000. We think that at the end of the fiscal year, June 30, 1954, there will be in the neighborhood of $1,250,000.

Mr. DAVIS. The Armourdale unit then has been the only significant portion of this Kansas City project that has been subject to delay?

General POTTER. Yes. There was one deliberate delay. Due to the program for reduction in expenditures, I could not permit some work at Kansas City to go ahead. As the committee knows, we had funds available at the beginning of the year of around $135 million and our expenditure rate was set at about $111 million, so it was necessary to defer some work arbitrarily in order to keep within that amount.

HAVRE, MONT.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$297,995	$297,995
Dec. 31, 1953	58,816	643,343
June 30, 1954 (estimated)	None	323,400

STATEMENT OF AVERAGE ANNUAL BENEFITS

Completion of the Havre project will provide a high degree of protection for this city of over 8,000 people. Under existing conditions it is estimated that 282 business establishments, 955 residences, 33 public buildings, numerous streets, and public utilities are subject to flood damage which will be prevented by construction of the Bull Hook unit. Construction of the Milk River unit will prevent flood damage to 152 business establishments, 123 residences, 2 public buildings, streets, roads, public utilities, and the Great Northern Railway tracks, yards, shops, and technical facilities. Provisions of the authorized protection of Havre from recurring floods is of vital concern to the residents of that city. The March–April flood on the Milk River caused serious property losses and accentuated the need for such protection. Average annual benefits are estimated at $271,700.

Average annual charges: Average annual charges are estimated at $76,480.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force	None
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955:	
(*a*) Channel, drainage facilities, diversion structure and gates, Bull Hook unit	$906,100
(*b*) Levee embankment, pumping plants and drainage facilities, Milk River unit	667,100

Mr. DAVIS. We will proceed with the general discussion of the specific projects for which funds are requested for the 1955 fiscal year within the Mississippi Basin, and the first of those is the project at Havre, on the Milk River in Montana.

General POTTER. Yes.

Mr. DAVIS. This item appears on page 457 of the justifications, indicating a total estimated Federal cost of $1,919,800. The appropriations to date, including $400,000 in the current fiscal year have amounted to $850,000, and we have a request for $700,000, which would bring the percentage total of funding on the project to 81 percent.

DECREASE IN FEDERAL COST ESTIMATE

I notice first of all that the Federal cost estimate has been reduced $200,000 since last year. Is that the reflection of a change in the project or simply the result of favorable bids on the project?

General POTTER. That reflects a remarkably low bid for what we call the Bull Hook Creek unit. Those are three dams, Scott Coulee, Bull Hook, and the lower diversion dam in the hills back of Havre. That is the unit that diverts the drainage from the hills back of Havre down into the canal and into the Milk River below the town. That is the unit that is presently under contract, Mr. Chairman, and for which $283,000 of the proposed appropriation will be supplied.

Mr. DAVIS. For those the estimated overall cost has gone down.

General POTTER. Yes.

Mr. DAVIS. I noticed the estimate for the so-called Milk River unit has increased somewhat. Will you explain that for us?

General POTTER. Yes. The Havre project I believe was authorized in 1944. Since that time there have been considerable building across the river. Last year we fought a considerable flood at Havre and it became quite obvious that a levee on the north side of the river was needed. The people across the river were not happy with the levees on the Havre side of the river, because they felt that it would cause floods to hit them much harder than it would if the levee did not exist. This is true. So we did include in the project a short levee on the other side of the river so that both sides would be protected in case of the next flood. That caused a raise in the price of the Milk River unit in the neighborhood of $200,000.

The apportionment of the proposed $700,000, as I said, was $283,100 against this contract and $332,400 against a contract for the Milk River unit, which we would let in September, and the remainder for Government costs on the project.

Mr. DAVIS. Did you lose any of your work which had been previously done on account of the flood?

General POTTER. No. The Bull Hook unit was started after the flood, and of course, we have done nothing on the levee unit. This is the town I mentioned earlier where there has been remarkable cooperation in the furnishing of rights-of-way. In fact, we had to slow them down a year ago when they were ready to sell their bonds before we were authorized to advertise the project.

BENEFIT-COST RATIO

Mr. DAVIS. This project has a very satisfactory benefit-cost ratio, 3.55 to 1, and I notice that in the justifications which you have submitted, a substantial part would be for protection, especially for the residential area of the Havre community.

General POTTER. I would say that Bull Hook unit does protect the residential area; that is its main function. The levee protects the industrial area; as the committee will remember, that is one of the main terminal points of the Great Northern Railroad, and considerable industrial activity exists there as a result of agricultural growth in the area.

Mr. DAVIS. What will remain to be done after the 1955 fiscal year?

General POTTER. The appropriations this year finish one-half of the Milk River unit, 90 percent of the Government costs and 100 percent of the Bull Hook unit, so that next year it will merely be money to complete the Milk River levee. The funding situation here would be that on June 30, 1953, we had an unexpended balance of $298,000, and December 31, 1953, $643,000, and on June 30, 1954, $323,000 is expected.

Mr. HAND. This is purely a local protection project; is it?

General POTTER. Yes. The annual benefits are $271,700; and the Bull Hook unit would have prevented 14 floods in the period 1902 to 1953. The 1938 flood on the Bull Hook area alone resulted in damages of $360,000.

And the Milk River unit would have prevented 16 floods from 1908 to 1953, and $448,000 damages were caused as a result of the 1952 flood alone.

Mr. HAND. What is the estimated value of the local participation, expressed in dollars?

General POTTER. $161,500.

Mr. HAND. What is the population of Havre?

General POTTER. It is about 8,000.

Mr. HAND. Does the project have any direct effect on the protection in the adjacent agricultural areas?

General POTTER. No. But this town is the center of that agricultural section, and is the area through which the local agricultural activities trade; it is the area from which their produce is shipped.

Mr. HAND. Are you in position to state the approximate assessed value of the property in Havre?

General POTTER. No, but I can furnish that information for the record.

(The information requested follows:)

Havre:	
Assessed value of taxable property	$15,750,000
Value of public property	13,500,000
North Havre:	
Assessed value of taxable property	2,200,000
Value of public property	1,250,000

FLOOD DAMAGE

Mr. CEDERBERG. As I understand, last year there was quite a disastrous flood in this particular area; is that correct?

General POTTER. Yes.

Mr. CEDERBERG. Is this usually an annual recurring situation as far as floods are concerned?

General POTTER. The Milk River generally does flood in the spring and damages along the Milk River throughout its entire length are quite frequent.

Mr. CEDERBERG. Last year was there not an unusually heavy year, so far as precipitation was concerned?

General POTTER. I think the year 1953 will be remembered in Montana for many years to come, because it was the year of big floods, especially on the Sun River, and at Great Falls.

Mr. CEDERBERG. Some of those rivers experience rather rapid flows when they do get heavy rainfall?

General POTTER. It can be torrential; like the typical flash floods in the dry area of the country; the rainfall runs off almost 100 percent. Those little dams we are proposing merely hold the water at a capacity high enough to get through the diversion channel which will lead into the river below the town.

Mr. CEDERBERG. The Bull Hook dams are now under construction?

General POTTER. All three of the little ones are, above the canal yes.

Mr. CEDERBERG. In the event of such a torrential rain in the spring of the year will that threaten the work that is being done there now?

General POTTER. Yes; but that is on the contractor. It is up to him to protect himself against nature. We have a firm bid.

Mr. RABAUT. General, I notice here that the acceleration in this program is very good, considering that the money to date will result in 44 percent completion, and with the $700,000 that you want to spend that will enable you to finish the project in fiscal 1955, practically.

When did you start the work on this project?

General POTTER. The contract was let in August, so the contractor did not have a whole working season this year.

Mr. RABAUT. According to that he has been moving right along with it.

General POTTER. He is making a nice start.

BENEFIT TO COST RATIO

Mr. RABAUT. You say this has a benefit-cost ratio of 3.38 to 1?

General POTTER. Due to the methods of evaluating benefits that has been raised to 3.55.

Mr. RABAUT. 3.55?

General POTTER. Yes.

Mr. RABAUT. It has been raised?

General POTTER. Yes.

Mr. RABAUT. How did that come about?

General POTTER. I understood that General Chorpening had discussed that somewhat with the committee.

Mr. RABAUT. That is under the new formula.

General POTTER. They used to work on a long range benefit basis, and they have brought it a little more closely to the present time. The present system is more factual I believe.

Mr. RILEY. General, those hills are generally of a rather impervious nature, so there is very little absorption of the rainfall?

General POTTER. As the water gets to the edge of the coulee it tears down through the town, and through the town you can see areas that are just not being used and have been abandoned due to the exceptionally heavy and rapid run-off. The condition is more than the destruction of still water and depth; it is the destruction of rapid water coming through the town.

Mr. RILEY. There is very little vegetation on those hills?

General POTTER. At the ground breaking, Mr. Riley, it was easy to get into the earth.

MISSOURI RIVER AGRICULTURAL LEVEES, KANSAS, IOWA, MISSOURI, AND NEBRASKA

Date	Unobligated balance	Unexpended balance
June 30, 1953	$1,664,287	$2,294,827
Dec. 31, 1953	1,402,491	1,434,308
June 30, 1954 (estimated)	1,006,800	1,063,400

STATEMENT OF AVERAGE ANNUAL BENEFITS

The Missouri River agricultural levees project is a series of levees and appurtenant works along both sides of the Missouri River from Sioux City, Iowa, to the mouth, a distance of 765 miles. The agricultural levees alone would provide substantial protection, and in combination with other units of the comprehensive plan for the Missouri Basin, the project will provide protection for 50 small communities of 100 or more population, about 1,500,000 acres of agricultural lands, highways, railroad lines and power and communication facilities in the Missouri River flood plain. Units of the agricultural levee system placed in operation since the project was initiated have presented flood damages estimated at over $8,400,000 in the period 1949–53. The average annual flood control benefits that have been allocated to this project as a result of the reduction in flood damages to be achieved by the comprehensive water control plan have been evaluated at $9,314,000.

Average annual charges: The average annual charges for the complete Missouri River agricultural levee project, Sioux City, Iowa, to the mouth, are estimated at $6,195,000.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force: (*a*) Channel rectification levee embankment surfacing, unit R 513–512	$72,100
Proposed in fiscal year 1954 but not yet in force	
(*a*) Levee embankment, unit R–440	143,600
(*b*) Seepage control measures, unit E–440	255,500
Proposed in fiscal year 1955: (*a*) Seepage control measures, unit L–448	249,500

Mr. DAVIS. The next project is the Missouri River agricultural levees, in the States of Kansas, Iowa, Missouri, and Nebraska.

The total estimated Federal cost is $151,200,000. The appropriations to date, including $100,000 in the current fiscal year, have been $26,897,700. We have before us a request for $400,000, of which it is indicated brings the total percentage of funding to 18.1 percent.

Last year we noted an increase in the anticipated Federal cost of about $10.5 million; and this year we get the bad information that the estimate has gone up another $7,164,000 since last year.

In the discussion last year you explained it on two bases: One was that the work was not well enough along to get an accurate estimate, and the other that you had decided, as a result of flood experience, to crown the levee with gravel and crushed rock. Are the same considerations controlling in this cost increase of some $7 million, or are there additional factors that explain this increase?

General POTTER. Of the $7 million increase, Mr. Chairman, $6 million is due to price increases, and the remainder is for underseepage control and the other modifications.

As the chairman can see, with a total appropriation estimate of $151 million as against $27 million appropriated to date, there is too great a distance to look into the future for us to take advantage of the current good bids that we have been getting on the work, and we feel that we should, almost without exception report these price increases as the index changes.

The proposed work this year is a continuation of the surfacing which is largely done, and the initiation of the placing or construction of the underseepage control.

Mr. DAVIS. Are you still using something of a trial-and-error method in attempting to develop your seepage control measures, or do you feel you now have it pretty well determined?

General POTTER. We have engaged in extensive research in the Kansas City district, with respect to the behavior of water underneath the levees under certain conditions and with respect to methods of controlling it. It has been extremely interesting, and I think that the bibliography of this particular development will reveal that the engineering has been improved immensely.

We have before you a picture of the Missouri River argricultural unit L–448, which is just downstream from St. Jo. I took part in the turning over of this levee to local interests about 3 months ago and traveled over that levee. They are immensely proud of it and it is being religiously maintained. The fact that caused me to really feel proud is that the dark green areas that you see on the map were wooded areas until after the levee was completed.

They are now productive lands, because the people who own those rather low lands, now feel that they are safe and can clear the land. To show you the richness of the area, one man who own a strip of land in one of those dark green areas, right next to the levee, said that in the first year's crop, the crops returns paid for the price of the clearing.

There are something like 16,000 acres of land behind this levee. The people have done all that we have suggested in the past; they have employed a maintenance man; they have bought the machinery to police and maintain that levee. He is employed by them and he keeps thatlevee in good shape all of the time.

Mr. RILEY. The landowners themselves purchased this machine and hired the man to protect it.

General POTTER. Yes, sir.

Mr. RILEY. It is a community project?

General POTTER. Yes. These people have put their own money out and are doing the job in a businesslike manner.

We have finished 15 of these units, not all of the same size, and there are about 200,000 acres protected at the present time. I have no example to offer the committee where the local people have not religiously gone in and maintained the federally constructed levees.

Mr. DAVIS. What do you propose to do during 1955 fiscal year in this overall project, General Potter?

General POTTER. In 1955, Mr. Chairman, we propose to continue the seepage control under these units at R–513; L–488; L–476; L–448, which is this one [indicating], and R–440. The numbers represent the distance above the mouth.

Mr. DAVIS. And the "R" and "L" refer respectively to the right and left banks?

General POTTER. Yes.

UNOBLIGATED AND UNEXPENDED BALANCES

Mr. DAVIS. Last year I think your request was for $800,000, and the final approval was for $100,000, indicating that the committee was expressing its interest in the work, even though I think we did feel at the time that there was sufficient money that had not been obligated that will enable you to continue the work on the project.

This year again it appears that you have a substantially unobligated and unexpended balance, and that there will be at the end of the current fiscal year. What do you plan to do with that?

General POTTER. Some $700,000 of that has been lent to other projects and will not be brought back until we are able to go ahead at a faster rate.

As you recognize, there has been no authority to start new units on this project. Money that we have over and above that used to finish plans for seepage control will be spent on the work I indicated for units already constructed.

As an example of this we are now designing under seepage control for unit L-488, and we do not plan to award a contract until April 1955.

I do not think I mentioned the benefit-cost ratio, which is 1.5 to 1.

MISSOURI RIVER, KENSLERS BEND, NEBR., TO SIOUX CITY, IOWA

Date	Unobligated balance	Unexpended balance
June 30, 1953	$15,696	$17,732
Dec. 31, 1953	33,028	303,903
June 30, 1954 (estimated)	None	50,000

STATEMENT OF AVERAGE ANNUAL BENEFITS

This project will protect 55,884 acres of land from bank erosion by the Missouri River and extends from the vicinity of Miners Bend, S. Dak., to Sioux City, Iowa, a distance of 19 miles. The land comprising the acreage consists of agricultural land, lake resorts, industrial areas, and the municipalities of Sioux City, Iowa, South Sioux City, Nebr. and Stephens, S. D. The average annual benefits are estimated at $698,050.

Average annual charges: The average annual charges are estimated at $508,900.

Data on Continuing Contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force	None
Proposed in fiscal year 1954 but not yet in force	None
Proposed in fiscal year 1955	None

Mr. DAVIS. The next project is the Missouri River, Kenslers Bend, Nebr., to Sioux City, Iowa, with an estimated Federal cost of $10,458,300. There have been appropriated to date, including $500,000 in the current fiscal year, $4,285,700. We have before us a request for the fiscal year 1955 of $100,000 which will bring the funding to 42 percent of completion.

Here we have an increase in the cost in the neighborhood of $250,000, which I assume represents cost index increasing; is that correct?

General POTTER. Yes; entirely.

Mr. DAVIS. What is the status of the work at the present time?

General POTTER. I think the committee knows that this work has been going on very slowly in the past few years. The proposed appropriation will be entirely used to innerconnect the work at Sioux City Bend, the lower end of the project. I have a strip map which represents the entire reach. In view of the interest of the committee, I have brought this special map to give you a look at the work you saw on the occasion of your recent trip to the site. There will be an ex-

tension of the work done after 1952 flood, immediately in front of McCook Lake.

The committee, in its visit stood at this point, and that point is now some three-eighths of a mile in the middle of the river.

You may recall the house of the gentleman who was with us. That house is now gone.

The erosion which is taking place in Miners Bend will continue to a point where it might possibly cut through to the next bend, and if so we will have a rather sad condition to take care of.

The project is a local flood-control project, as you know, and one of the principal problems we face is the possibility that the river would cut through to McCook Lake right at this point.

We also fought very hard in 1952 to hold this levee on the south side of the river and keep the river from cutting across south of the town of South Sioux City [indicating].

I might add that the flood of 1952 seriously injured this rather extensive residential area along McCook Lake by putting out a large amount of silt in that lake.

The committee will remember that this land was very fertile and extremely well developed.

MINERS BEND

Mr. DAVIS. General, when you use the figure of about $10.5 million that includes the entire stretch, that you generally refer to as the Kenslers Bend area, and it also includes the stretch we have been discussing, commonly referred to as Miners Bend, as I recall.

General POTTER. That is the entire project, which was authorized at 2 different times but included now as 1 project.

Mr. DAVIS. We have no separate request before us this year for funds in the Miners Bend area?

General POTTER. No.

Mr. DAVIS. Are your plans in such shape with respect to the funds that we have provided there as the Miners Bend area that you are ready for construction, or are you still determining what should be done as the best method to handle it?

General POTTER. We are ready, as this map indicates, with the plans that will solve this difficulty, depending upon the time that funds can be made available. There might be changes in some of the alinements, but I believe as of now we could let a contract this fall and start that work.

Mr. DAVIS. The best estimate of the cost of the approach to Miners Bend is about what?

General POTTER. The best estimate?

Mr. DAVIS. Yes.

General POTTER. The plans to control the Miners Bend—Kenslers Bend, would involve $2,200,000 in 1955, $1,850,000 in 1956, and $850,000 in 1957, if work were to go ahead at a faster rate.

The Kenslers-Sioux City Bend would involve $650,000 in 1955, $490,000 in 1956, and nothing in 1957.

Mr. DAVIS. What would be required in the way of local cooperation?

General POTTER. Local interests are required to provide the land required for the project.

Mr. RABAUT. This project that has been shown on this map, it seems to me, is one that is not receiving the attention that it deserves, since the status of the project as indicated in the justifications is about 38

percent completed. Now with a 38-percent completion we do not provide for the spending of any more money on it, practically speaking, and it does appeal to me as being a project where we really ought to take action or let it go. We are just playing with the amount of progress that we are making here, with the amount of allotment for this year, which could result in danger to the work that has already been done. It seems to me that in this project we ought to go ahead with a satisfactory program, march along with it until it is completed. I felt that way before, and I have not changed my attitude toward it at all. I still feel the same way.

Mr. RILEY. General, has there been evidence of maintenance by the local interests when it is completed?

General POTTER. In the former testimony I made a mistake on that. This is a Federal maintenance project.

Mr. RILEY. This is federally maintained?

General POTTER. Yes.

MISSOURI RIVER, KANSAS CITY TO MOUTH

Date	Unobligated balance	Unexpended balance
June 30, 1953	−$289,056	−$289,056
Dec. 31, 1953	373,560	871,788
June 30, 1954 (estimated)	0	0

Statement of average annual benefits [1]

Navigation: Savings in transportation costs	$6,915,000
Erosion control: Protection against erosion of an area of 1,800,000 acres, creation of 188,000 acres of new land by contraction of the river into a single channel, enhancement of land values, and removal of threat of erosion to thickly populated urban areas and other high-value installations	19,395,000
Total annual benefits	27,600,000
Average annual charges	16,500,000

No continuing contracts in force or proposed for fiscal years 1954 and 1955.

[1] For entire project Sioux City to the mouth.

Mr. HAND. The next project is Missouri River from Kansas City to the mouth, a navigation project, on which the total estimated Federal cost is $118,174,900; estimated local contributions $644,400, and total appropriations to date $95,907,900. The amount requested for fiscal year 1955 is $2 million, which will bring the project to 83 percent of funding completion. The balance to complete after fiscal year 1955 is $19,622,600.

General, will you give us the general nature of this project, and what you propose to do with the amount requested for the current fiscal year?

General POTTER. The project from Kansas City to the mouth, as you have indicated, Mr. Hand, is well along and the moneys we have used this year and the proposal for the money for next year is to continue the construction of revetments, the placing of rock in the completed dikes, and further shaping of the channel. The money does not include work on Jackass Bend, one of the major jobs still to be done, nor does it include any other major single item.

From Kansas City to the mouth, the work is spread among 13 channel reaches and the highest amount in any one of those reaches, Miami to Glasgow Bend, is $360,000, with a low of $25,500 from Hermann to Washington reach.

Mr. HAND. What is the distance between Kansas City and the mouth?

General POTTER. It is 386 river miles.

Mr. HAND. What is the general status, briefly, as to navigation there?

General POTTER. The river regimen this year afforded 6 to 6½ feet and next year we think we will be able to guarantee 6.5 feet to 7.5 feet, depending on whether we have spring floods or not. The condition of the river, of course, depends largely on the spring flood. If we have a little flood, or no flood, our channel is in much better condition.

As the chairman well knows, the major benefit from this project—and that includes the entire river from Sioux City to the mouth—is the stabilization of the banks so that the agricultural land, municipal, and industrial areas and transportation facilities will be protected, and so that we will be able to maintain the levees we have already built and those that are still to come.

Mr. HAND. So, while this is essentially a navigation project, it also has a great deal to do with the protection of the bank works heretofore constructed and also the protection of surrounding agricultural lands from flooding?

General POTTER. Yes, sir. The benefits from the project are roughly 2 to 1 in favor of stabilization.

Mr. HAND. Has the benefit-to-cost ratio been increased?

General POTTER. Yes, sir. It is now 1.67 to 1.

I have three charts or photographs that I would like to show you briefly.

Mr. HAND. Before we look at these charts: This project is not only about 83 percent funded, or will be if the present amount requested is allowed, but actually is physically completed to the extent of about 81 percent. Is that correct?

General POTTER. Yes, sir.

Mr. HAND. How much money are you proposing to spend in addition to the appropriation sought? In other words, how much unobligated balance do you have allocated to this project?

General POTTER. At the present time, there is $373,000 unobligated. A large part of that is for hired labor operations on the river.

TONNAGE TRAFFIC

Mr. HAND. Will you insert at this point in the record a table showing the general character and extent, tonnagewise, of the navigation for the past 5 years?

General POTTER. Yes, sir.

(The matter referred to follows:)

Traffic in tons, Kansas City to the mouth

Year	Sand and gravel	Waterway construction material	Commercial traffic	Total
1948	101, 246	545, 227	[1] 150, 741	797, 214
1949	242, 342	568, 644	106, 422	917, 408
1950	169, 790	445, 859	147, 484	763, 133
1951	270, 320	438, 165	107, 078	815, 563
1952	160, 159	979, 212	59, 285	1, 198, 656

[1] This figure includes some crushed rock.

Mr. HAND. What is the projected depth of the river after this project is entirely completed?

General POTTER. The authorized depth is 9 feet.

Mr. HAND. Now, if you will, go ahead with that chart.

General POTTER. This picture is one I showed this morning and is given at this time to highlight the uncontrolled condition of the river. As the chairman can see, the previous stabilized bank line—and this is in the section from Omaha to Sioux City—is the line now pointed out by Mr. Johnson. Since that time, due to the fact that the structures which were holding that river had to be abandoned, because of no maintenance funds, and the river has eroded into that bank as shown there and will continue until it is again controlled.

Mr. HAND. To what extent are you putting revetments in there?

General POTTER. The concave banks are revetted as this next picture will show. This is levee 476–L, which is on the left bank of the river on the Missouri side below St. Joseph. It is very interesting to note that dotted line, which is the 1890 channel line, which roughly would have cut out at least half of that bend shown in the picture. Since that time the river has been stabilized within the banks as shown and the existing levee, 476–L, has been built. This is one of those that protects thousands of acres about which I talked this morning.

You will notice the green shaded area near the levee. This picture was specifically brought to the committee to show the effect of lack of stabilization structures in floods or high water. On the concave side of the bend which the river will attack and did attack here, it got very close on to the toe of the levee.

Since the flood, those structures have been repaired and the accretion behind them is shown. Within a few years, that accretion will be built up and protected with rock and be stabilized.

Mr. HAND. The green portion shows the accretion?

General POTTER. It shows the part that eroded out.

Mr. HAND. Where is the accretion taking place now?

General POTTER. Since that time, the accretion is building up behind the dikes.

I might say that until 1946 or 1947 it was our habit to drive those dikes out there shown in the middle of the river with thick pile clumps and use a timber mattress to protect the bed from erosion. The cost of that work was in the neighborhood of $50 a foot. We have changed that way of working and now put those piles in much thinner and do not use a mattress, but rock those dikes heavily. The cost is in the neighborhood of $38 a foot. So a considerable saving has been made in the kind of work we do.

Also, when they fill the works out to the line of that dike, we will have the base in upon which we will build the bank revetment and protect against erosion for all time to come. I had a survey made this year as to the stability of that kind of work as against the mattress type of construction, and our maintenance cost is startingly lower on this type than it was under the type where we built willow or timber mats.

Mr. HAND. Now, General, we come to a problem which is familiar to all of us. Is there any way we can clearly differentiate between work to be performed with maintenance or construction funds?

General POTTER. Yes, sir. And, to differentiate, I would like to explain the past policy which existed up until about 1950. Up until then, it was the policy to consider new work as a stretch or bend or structure that had never been touched before, never been built at all. If that structure were built under the new-work funds and then through a flood or other condition was destroyed and it had to be put back in a second time, it was put in with maintenance funds. That made such a big backlog of maintenance which never seemed to reduce, that we changed the concept and now consider that everything that is a new attack, even though work had been done previously, is new work, and maintenance is purely that work that is upon the structures that are still standing and only need a few more piles or rock to keep them in operating condition.

Mr. HAND. That presents us with a somewhat clearer picture, I think, than before.

General POTTER. Before it was getting to the point where you could almost justify an expenditure under either maintenance or new work. That, I do not think, was sound. As a matter of fact, General Sturgis was the one who set up the new system when he was Division Engineer for the Missouri River Division.

CASH INCREASE OF PROJECT

Mr. HAND. What, roughly, is your cost increase on this project since the last time it was presented?

General POTTER. On the stretch from Kansas City to the mouth, the total increase is $1,089,200; $910,200 is price level changes, and $179,000 is additional land requirement over that which existed last year.

Mr. HAND. Price level changes from when? When was the last time you figured the project?

General POTTER. July. It is on a fiscal year basis.

Mr. HAND. When did you make your previous estimate?

General POTTER. In July before.

Mr. HAND. It is a 1-year interval, in other words?

General POTTER. Yes. It is based on the standard construction index figured out by the Engineering News-Record and published monthly.

LOCAL COOPERATION

Mr. HAND. What is the status of local cooperation here?

General POTTER. Local cooperation when required—and there are very few places where it is required—is forthcoming; has always been forthcoming.

Mr. HAND. Your planning report makes reference to the fact that in the construction cost for the project itself no local cooperation is required, but there is required of local interests to provide adequate

terminal and transfer facilities. What do you have to say about the status of that requirement?

General POTTER. I believe that rather than being behind in furnishing adequate terminal facilities, the people have a tendency to be ahead. For instance, the terminal dock in Kansas City has been there for years and there have been some years when it has gotten very minor use. As to the feature of terminal requirements, I can only quote what Captain Parker stated at Jefferson City yesterday, that there is a firm in Chicago which will build a terminal anywhere along the Missouri if they show the traffic is there to be transported. And at Omaha, the local dock board spends their money religiously in keeping their local dock in shape.

There is a dock now existing in Glasgow, and there are many other small docks up and down the river in the smaller communities.

Mr. HAND. Even though their use is somewhat limited, they are maintaining those facilities in good condition?

General POTTER. Yes. Omaha, I think, spent $25,000 last year and has completed putting the dock back in shape.

PROPOSED WORK

Mr. HAND. What do you expect to do with the $2 million sought and also with the three hundred thousand odd dollars that is unobligated, that you propose to spend during the fiscal year? On what are you going to spend it?

General POTTER. I have a sheet here of work proposed for the fiscal year 1955, Kansas City to the mouth, that shows those 14 bends or reaches that we propose to spend it on.

Mr. HAND. That is all about the same type of work—bank stabilization?

General POTTER. Yes, sir.

Mr. HAND. Will you insert that table in the record at this point?

General POTTER. Yes, sir.

(The matter referred to follows:)

Work proposed for fiscal year 1955, Kansas City to mouth

Dike and revetment construction:	
Quindaro to Liberty Bends	$124,000
Liberty to Sibley Bends	93,500
Sibley Bend to Lexington Reach	139,000
Lexington Bend to Waverly Reach	152,000
Waverly to Miami Bends	287,500
Miami to Glasgow Bends	360,000
Bluffport to Boonville Reaches	84,000
Boonville Reach to Sandy Hook Bend	210,500
Sandy Hook Bend to Isbell Reach	83,000
Isbell to Hermann Reaches	184,500
Hermann to Washington Reaches	25,500
Washington Reach to Weldon Springs Bend	46,500
Weldon Springs Bend to St. Charles Reach	28,000
St. Charles Reach to Amazon Bend	36,000
Dredging in connection with above construction	80,000
Removal of structures for realinement	66,000
Total	2,000,000

Mr. HAND. Under the formula you recently gave us, can you tell us generally what you expect to spend in the way of maintenance, as distinguished from construction?

General POTTER. Yes, sir. The budget amount for maintenance on this reach for fiscal year 1955 is $2,813,000. It has averaged about $2,850,000 over the past 4 years.

INCREASE IN NAVIGATION

Mr. HAND. Can you give us anything on the estimated increase in navigation which would result from this proposed improvement?

General POTTER. The big item there is the fact that last year we had five contract carriers on the river. It is the first year there has been competition and the fact that competition does exist—and I understand it was quite active—and the fact that one of these organizations is establishing their local office in Kansas City, and the fact that the representative stated in a public meeting that the problem is not looking for cargo, but being able to furnish enough boats to move it, leads me to believe that the traffic will build up as we have predicted in the past. This year there is optimism among shippers; a year ago that was only a prediction.

Mr. HAND. In your benefit-to-cost ratio, is that calculated both on the basis of navigation benefits and also on the basis of flood control benefits to the surrounding agricultural area?

General POTTER. Yes, sir, it is. The benefits are about in this percentage: Navigation benefits, about 26 percent; protection of improvements, that is municipal and industrial areas and transportation facilities, 35 percent, and agricultural lands, 39 percent. Navigation benefits represent about a quarter of the total benefits.

Mr. HAND. And somewhat over one-third is protection of works you have already constructed, and the rest is flood control to the adjacent area?

General POTTER. Yes, sir. When I say improvements, it is not the protection of dike structures; it is pipelines, bridges, industrial areas, as differentiated from agricultural land.

Mr. HAND. Not only your own improvements, but also general public works?

General POTTER. It is the others; not ours.

Mr. HAND. It is all improvements by the local interests?

General POTTER. Yes, sir.

Mr. HAND. I am glad you mentioned that, because I was not sure whether you included protection to some of your own works. But those are works constructed by local interests, as distinguished from agricultural lands.

General POTTER. You might say the protection of municipal and industrial improvements, as against agricultural lands.

Mr. RILEY. I note that in the stretch of Missouri River from Kansas City to the mouth your estimate of work to be done after 1955 is $19,622,600. Does your estimate still show that would be adequate to do the work in mind?

General POTTER. Yes, sir. This project is reevaluated every year. It is necessary to do that normally because after high water the things we thought we were going to do before the high water are frequently in a lower category due to the damage being done to structures which before the high water were in pretty good shape.

Mr. RILEY. Taking the river as a whole, how far up do you contemplate making it navigable?

General POTTER. The approved project is to Sioux City. The active head of navigation now is really Omaha, and navigation that can get to Sioux City must carefully plan against the stage that they can predict. In other words, they have to depend on higher water to get to Sioux City.

Mr. RILEY. It takes an average dept of about 9 feet to make it navigable the entire time; is that correct?

General POTTER. The new equipment being built by the Sioux City and New Orleans Barge Line and some of the other equipment being provided is specifically designed for Missouri River traffic as it is now; in other words, 6- to 7-foot navigation. That equipment will be capable of being used on the 9-foot channel and, hence, on the Mississippi; but it is designed to be profitable to carry at 6½ to 7 feet, and so operates.

Mr. RILEY. When your program is completed, would you have a 7-foot depth up as far as Sioux City, or farther?

General POTTER. When the plan is completed, we will have a 9 foot channel to Sioux City, and that is all our authorization carries at the present time.

AREAS PROTECTED BY STABILIZATION WORK

Mr. HAND. Can you furnish us with a statement as to the extent of the acreage protected from floods by the proposed improvement?

General POTTER. It amounts to 1.5 million acres from Sioux City to the mouth.

Mr. HAND. That is the total length?

General POTTER. Yes, sir.

Mr. HAND. It is not divided, of course, and cannot very well be for this one project?

General POTTER. Considering erosion alone, yes it can be and those figures can be furnished for this particular stretch.

(The matter referred to follows:)

Areas protected by stabilization work

Reach:	Acreage
Kansas City, mouth	490,000
Kansas City to Omaha	480,000
Sioux City to Omaha	536,000
Total	1,506,000

NOTE.—These acreages are those behind levees constructed or to be constructed. There are several hundred thousand additional acres outside of the levees which receive erosion protection from the stabilization works.

Mr. RILEY. Are there any lockages contemplated on the river from Sioux City?

General POTTER. No, sir.

Mr. RILEY. It is going to be an open channel?

General POTTER. It is going to be an open channel at all times; yes, sir.

MISSOURI RIVER, OMAHA TO KANSAS CITY

Date	Unobligated balance	Unexpended balance
June 30, 1953	$200,014	$438,501
December 31, 1953	443,043	1,230,041
June 30, 1954 (estimated)	0	0

Statement of average annual benefits[1]

Navigation: Savings in transportation costs	$6,915,000
Erosion control: Protection against erosion of an area of 1,800,000 acres, creation of 188,000 acres of new land by contraction of the river into a single channel, enhancement of land value, and removal of threat of erosion to thickly populated urban areas and other high value installations	19,395,000
Total benefits	27,600,000
Average annual charges	16,500,000

[1] For entire project Sioux City to the mouth.

No continuing contracts in force or proposed for fiscal years 1954 and 1955.

Mr. HAND. The next project will be the related project on the Missouri River from Omaha to Kansas City.

The total estimated Federal cost is $110,352,400; total appropriations to date are $82,460,800 and the amount requested for the current fiscal year is $3,300,000, which proposes to bring the project to 78 percent of completion with respect to the funding, and the balance to complete after fiscal year 1955 is $24,591,600.

I take it this is an entirely similar project in a different reach of the river?

General POTTER. It is entirely similar. You could hardly tell the difference, except that this project is not as far along as the one from Kansas City to the mouth, and the measure of that difference would probably be in the neighborhood of one-half to 1 foot difference in the normal navigational depths.

Mr. HAND. The physical completion is also very closely parallel to the funding completion. It is about 74-percent completed physically.

General POTTER. Yes, sir. The unexpended and unobligated balances on this particular stretch, Omaha to Kansas City, will be close to zero.

Mr. HAND. So the amount now requested is about the amount you intend to spend in fiscal 1955?

General POTTER. Yes, sir. I have also a table on this stretch that shows from Omaha to Kansas City 10 reaches will be worked on. The greatest amount for any one of those reaches will be $591,000, and the least amount will be $80,000.

Mr. HAND. Will you insert a detailed table in the record on that at this point?

General POTTER. Yes, sir.

(The matter referred to follows:)

Work proposed for fiscal year 1955, Omaha to Kansas City

Dike and revetment construction:	
Council to Plattsmouth Bends	$80,000
Plattsmouth to Nebraska Bends	378,400
Nebraska to lower Sonora Bends	591,200
Lower Sonora to upper Indian Cave Bends	209,000
Upper Indian Cave to Rulo Bends	540,900
Rulo to Mount Vernon Bends	433,000
Mount Vernon to St. Joseph Bends	152,500
St. Joseph to Atchison Bends	298,500
Atchison to Leavenworth reach	409,000
Leavenworth reach to Parkville Bend	102,000
Dredging in connection with above construction	50,500
Removal of structures for realinement	50,000
Lands and damages	5,000
Total	3,300,000

Mr. HAND. What is the benefit-to-cost ratio on this stretch?

General POTTER. I do not have it broken down for the various reaches. The 1.67 I gave covers the entire river.

TONNAGE TRAFFIC

Mr. HAND. Will you insert in the record at this point a table showing the character of the navigation for the past 5 years?

General POTTER. Yes, sir, for this particular stretch we have that data.

(The matter referred to follows:)

Traffic in tons, Kansas City to Sioux City [1]

Year	Sand and gravel	Waterway construction material	Commercial traffic	Total
1948	114,805	531,545	[2] 164,157	810,507
1949	208,869	559,632	31,204	799,705
1950	113,090	687,591	68,533	869,214
1951	280,995	999,695	90,923	1,371,613
1952	222,500	1,278,915	145,463	1,646,878

[1] Breakdown not available but essentially all of this traffic was below Omaha.
[2] This figure includes some crushed rock.

Mr. HAND. The depth presently is about what in this stretch?

General POTTER. The depth from Kansas City to Omaha generally obtaining last year was 5.5 feet to 6 feet.

Mr. HAND. What is the average distance in this stretch?

General POTTER. Omaha to Kansas City, 245 miles.

Mr. HAND. It is also contemplated to bring this depth to 9 feet along with the rest of the project?

General POTTER. Yes, sir. There is one major channel change we have been working on during the last year and will complete with part of these funds; that is the work at Hemmies Bend.

Mr. HAND. There has been a cost increase in this stretch of the river, too, which I take it is accounted for largely for the same reason you have given before, that is, an increase in the cost index.

General POTTER. Omaha to Kansas City, the increase is $1,226,300, which is entirely due to price-level changes.

LOCAL COOPERATION

Mr. HAND. To what extent is local cooperation furnished on this stretch of the river; what is the status of that local cooperation, and is it satisfactory?

General POTTER. There is no local cooperation in this stretch.

Mr. HAND. In any part?

General POTTER. No.

Mr. HAND. What about the terminals? Are they constructed and maintained in a satisfactory condition?

General POTTER. I would say they are and the people are anxious to see the traffic that will make them bigger.

MAINTENANCE

Mr. HAND. What is the allocation of maintenance funds as distinguished from construction funds for fiscal 1955?

General POTTER. In the reach from Omaha to Kansas City, the 4-year average was $3,270,000 and the budget for this year is $3.3 million.

Mr. HAND. Let me ask if both the annual maintenance here and in the stretch below that we just discussed is not pretty high maintenance for a river of that depth?

General POTTER. Yes, sir. But as you brought out in your questioning, we are talking of a distance of 600 miles that involves work in place of $170 million already and many of the structures are 20 years, plus, old and some of the structures are getting pretty well beaten. We have always figured the life of a pile is from 8 to 10 years, and some of these have been in there for quite a long time. I consider that this maintenance will continue at this level until the rocking of the completed structure enables us to let the piles disintegrate and disappear without replacement.

Mr. HAND. Has this considerable cost of annual maintenance been fully reflected in the cost of maintenance from which you derive your cost-benefit ratio?

General POTTER. Yes, sir.

OPPOSITION TO NAVIGATION IMPROVEMENTS

Mr. CEDERBERG. Have you had any opposition to the improvements along the Missouri River for navigation?

General POTTER. Only inasmuch as once in a while they will affect a particular farmer. For instance, this last year, in making a small cutoff at Hemmies Bend, it was necessary, as I remember, to take somewhere in the neighborhood of 80 to 100 acres. The problem was not how much we were going to pay him; we arrived at that price very easily, but was a determination of the legality or necessity for the taking. It was soon determined that it was legally necessary to pay him, and that problem disappeared.

There has been in the past and always will continue to be people who feel they should be paid for land eroded prior to the time we come in and put up our works that bring the land back. But those cases are obvious and are not paid.

Mr. CEDERBERG. Have the railroads opposed this navigation project at all?

General POTTER. I suppose it is the general policy of railroads to oppose all navigation projects.

Mr. CEDERBERG. Have they opposed this one?

General POTTER. Specifically?

Mr. CEDERBERG. Yes.

General POTTER. No, sir; not that I know of. I know of no overt action on their part to stop this project.

Mr. CEDERBERG. Do you think this navigation along the Missouri River competes with the railroads?

General POTTER. I have always felt and am sure of my facts that navigation traffic increases railroad traffic; it must also be moved to and from navigation facilities by rail or bus.

Mr. CEDERBERG. Do you think that is true in all parts of the country as well as Missouri?

General POTTER. Yes, sir. As an example of that, I would like to hark back to the port of Houston where, since the construction of

that harbor the railroad facilities necessary to its use have increased 11 times.

Mr. CEDERBERG. Is that also true of the port of New Orleans?

General POTTER. I think without doubt.

Mr RABAUT. I notice that the requested funds for 1955 in the sum of $3,300,000 will bring the project to 78 percent of completion. While that is a sizable sum in its relationship to the estimated Federal cost of $110 million, it only brings the program up three points, namely, from 75 to 78 percent.

Usually when a project is over the hump in past years we start to try to get the program accelerated and finished.

Has not that been the general practice?

General POTTER. You are talking my language, Mr. Rabaut,

Mr. RABAUT. I mean the general practice. I would like to know why this program is not getting a little more attention. Because I think where you are dealing with projects of this nature, you can have damage to some of the work that has already been done when you do not have it finished

General POTTER You are absolutely right there.

Mr. RABAUT. I wondered why this program is not going along at a faster rate.

General POTTER. Well within the ability of the economy to stand this kind of work, whether or not this project has its fair share I can only judge by the very critical analysis that I know the Bureau of the Budget gives our proposed budget.

Mr. RABAUT. I remember in years past when we had a program developed to the point of 75 percent complete, we used to try to get the program out of the picture, to go along and take a couple of bites at it and get it finished, because we figured it was economy. Now if you carry it along at the rate of 3 percent a year, this program is going to go on for 8 years.

General POTTER. Not only that, but it increases the maintenance.

Mr. RABAUT. It increases the maintenance and sometimes you run into trouble with some structures that you have actually put into the program that get damaged.

I just wanted to get that in the record.

Mr. RILEY. How susceptible is the work which has been done between Omaha and Sioux City to damage as a result of floods and the prolongation of the program?

General POTTER. From Sioux City to Omaha the works we have lost in the last 3 years will cost $21 million to replace, and the loss in the project during the last year is in the neighborhood of $8 million at their replacement value.

Mr. RILEY. That is Omaha to Sioux City.

General POTTER. That is Omaha to Sioux City.

Mr. RILEY. You have three stretches here—Omaha to Sioux City; Omaha, Kansas City to the mouth, and Omaha to Kansas City.

General POTTER. That is right.

Mr. RILEY. Would that estimate hold good on the other stretches?

General POTTER. No, sir. On the other stretches we do have this maintenance money to make available and the stabilization is nearer to completion. On the stretch from Sioux City to Omaha, we put only enough maintenance money to keep the stretch immediately above

Omaha in shape so that the river will enter the Omaha stretch in a good channel.

Down below, though, I think you might say the damage due to being uncompleted is a fairly large part of the maintenance money we spend on that stretch each year—not all, because there is some normal deterioration on the structure due to age, but some is due to uncompletion.

I can tell you this, that the work at Hemmis Bend, which has a value of a couple of million dollars, would have been totally unnecessary if the works there had been in such shape that they could have stood the 1952 flood.

Mr. RILEY. We all recognize there is a certain definite limit that the economy can stand in this country; but if it were possible to have available the amount of money which is needed to complete this project, what would be a practicable and economical period to complete it?

General POTTER. The stretch from Kansas City to the mouth, I feel, could be completed easily in 3½ to 4 years. I would not say much faster, because there is some work the river itself can do at no cost. The stretch from Omaha to Kansas City, 5 to 6 years, the last year, of course, being a relatively minor year. The stretch from Sioux City to Omaha we could not count on less than 8 years, I would say—7 or 8 years to complete once we get started on it.

GAVINS POINT RESERVOIR, NEBR. AND S. DAK.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$3,020	$5,482,642
Dec. 31, 1953	2,942,263	10,538,905
June 30, 1954 (estimated)	None	3,045,600

STATEMENT OF AVERAGE ANNUAL BENEFITS

The Gavins Point Reservoir is located near Yankton, S. Dak., approximately 72 miles downstream from Fort Randall Dam, and by regulation of flood discharges from the intervening area will be of particular value in final regulation of downstream flows. In addition to generating substantial electric power from its installation, the Gavins Point project will make it possible to obtain maximum value from power generators at Fort Randall by permitting unrestricted peaking operations at the plant through the absorption of fluctuating releases. Annual benefits from the project are currently estimated as follows:

Flood control	$385,000
Power: Values used for capacity and energy are $28.05 per kilowatt for capacity and 4.26 mills per kilowatt-hour for energy	3,070,000
Total benefits	3,455,000

Average annual charges: Average annual charges are estimated at $2,774,000.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Powerhouse substructure, intake structure, and earthwork stage II	$19,327,000
(*b*) Powerhouse, intake gates, frames, and bulkheads	660,000
(*c*) Powerhouse, intake gantry crane	242,000
(*d*) Monorail	34,000
(*e*) Turbines	3,669,000
(*f*) Governors	256,000
(*g*) Generators	4,310,000
(*h*) Powerhouse cranes	190,000
(*i*) Switchyard transformer	360,000
(*j*) Oil circuit breaker	220,000
Proposed in fiscal year 1954 but not yet in force:	
(*a*) Road relocation, Yankton County	100,000
(*b*) Dam, overflow section, ice gates, safety boom, etc	2,436,300
(*c*) Turbines and governors, installation	583,000
(*d*) Switchyard structure and appurtenances	502,000
(*e*) Switchgear and ground mat	137,000
(*f*) Main power cables	62,000
Proposed in fiscal year 1955:	
(*a*) Road relocation, Bon Homme County	166,000
(*b*) Powerhouse superstructure	2,754,000
(*c*) Operators' quarters	155,000

Mr. HAND. The next project is the Gavins Point Reservoir in Nebraska and South Dakota. This, of course, is a wholly different type of project; it is a multiple-purpose project including power.

The total estimated Federal cost is $60,055,000; appropriations to date have been $20,680,800; the appropriation requested for fiscal year 1955 is $11 million, which will bring the project to 53 percent of completion with respect to the funding. The balance to complete after fiscal year 1955 is $28,374,200.

The amount requested of the committee is comparatively a large sum, $11 million, and I would suggest that you give us a fairly detailed statement concerning the general nature of the project, the present status constructionwise; what you propose to do with the $11 million together with any unobligated balances you have, and particularly the justification of it both from the standpoint of flood control and power, together with the benefit-to-cost ratio.

General POTTER. To explain the features of the dam, I have an enlarged photograph on which is superimposed the stages of construction.

At the present time, the entire dam, spillway, and powerhouse substructure are under contract. That contract has an estimated total cost of $19,300,000.

The appropriation we are requesting includes $4,786,400 to carry that contract on to 86 percent completion. The work that will be done with that money is shown in green on the photograph and includes a further buildup of the embankment, which will stretch almost to the other bank leaving about 600 feet for the river to use during the next flood season. The contractor is almost caught up to a very fast schedule; the powerhouse and spillway are completely excavated and concrete operations are taking place in both locations. The fill is being built up and he is even working this winter in random fill areas where compaction of the fill is not required.

This reservoir will have a capacity of 540,000 acre-feet—relatively small compared to the larger dams upstream—and the reservoir at

maximum pool will have an area of about 33,000 acres. When completed it will include three 33,000 kilowatt units, or a total of about 100,000 installed kilowatts.

The benefit-to-cost ratio is 1.25 to 1 for it as a structure alone, but in combination with Fort Randall, which it serves as a regulating dam, the two together will have a 1.57 benefit-to-cost ratio.

On the work that is completed already: The land acquisition is about 14 percent complete; the access road is complete. The large contract I just described is 28 percent complete.

The generators and turbines are ordered and are about 3 percent on the way.

The entire project is about 22 percent completed and will be 53 percent completed with the money we are requesting.

Just to give you an idea of the size of the project, the spillway width at crest is 664 feet and the roadway on that spillway is 109 feet above the basin slab down below. So it took a pretty wide area to get all that in one picture.

As to the utilization of the $11 million, as I have stated, $4.8 million will be for the present contract; for the transformers, $107,000; land acquisition, $1 million; turbines, $980,000; generators, $400,000; small contracts under way—11 of them—$2,194,000. Those are all going jobs.

The new jobs that we propose to start in this year, to be awarded in March of 1954, are the switchyard structures for which we would use $222,000; clearing would also be initiated. Since this structure closes in 1955, we have to get the clearing underway as we have done none so far. The clearing is a total cost of about $1 million and has $600,000 set against it for fiscal year 1955. The powerhouse superstructure contract to be awarded in June 1954, at a total cost of $2,754,000 has $300,000 set against it. The intake gates and the frames already under contract, are $360,000.

That makes up the $11 million.

Mr. HAND. Give us some precise location of this project.

General POTTER. This project is 5 miles above the town of Yankton.

As to the status of the funds: On June 30, 1954 we estimate we will have all of our present money obligated, and the unexpended balance will be $3,045,000.

Mr. HAND. You are again reaching that zero point, are you not?

General POTTER. Yes, sir. There have been no increases in cost.

I would like to report to the committee at this time, although it has not yet been officially reported to the Bureau of the Budget, that we will next year reduce the cost of this project by about $8 million and the estimate will still include, we think, adequate contingencies.

LAND ACQUISITION

Mr. HAND. When you say, General, there has been no increase in cost, do you have in mind apparently some increase in the cost of land acquisition which possibly involves only an increased amount of land but does involve an increase, does it not?

General POTTER. There is some increase in cost there, but not a considerable increase in the cost of the structure. I am not yet able to report to the committee the cost saving due to the new real-estate policy on this project; but from our present and approved new taking

line it appears that some 4,000 fewer acres will be taken than would have been under the other taking line we operated under before the new policy was adopted.

Mr. HAND. Is that reflected in any of your present estimates, because the committee has some information to the effect there has been an increase in the acreage from 35,780 to 40,750.

General POTTER. The 35,000 I believe was the level area of the pool. As you remember, from seeing that area, it is necessary to take more than just that level area of the pool. The pool elevations in this reservoir won't vary too much, so the 5-year flood height does not mean too much in this case.

Mr. HAND. The reduction will result from your new land policy?

General POTTER. Yes, sir. The total taking will be less than 40,000. But due to the fact that we have to consider the aggradation problem up around the town of Niobrara, we have not yet worked out the acreage in that area.

Mr. HAND. You are still taking that acreage, but are taking it by easement or flowage rights?

General POTTER. No, sir, we are taking less, actually, than the 40,000 acres.

Mr. HAND. You actually will not take that many acres?

General POTTER. We will take all of the land that will at times be covered by water, but we will take easements where the flowage problem is slight.

Mr. HAND. It does not reduce so much the area you take as it does change the character of your title from a fee title to an easement or flowage right?

Mr. JOHNSON. In this case the overall taking will be reduced and there will not be very much easement taking.

Mr. HAND. Tell us about what the overall taking will wind up to be?

General POTTER. I think in the neighborhood of somewhere around 36,000 acres. That is fee and easement. I would like to be able to correct that next year when we have worked out the detailed taking.

Mr. HAND. What is the contemplated completion of this project, General?

General POTTER. We propose to have the first power on the line in October of 1956 and the project should be completed in 1957.

Mr. HAND. Are you having any delays in the scheduling of the power?

General POTTER. Six months.

Mr. HAND. Would that have any material effect on the benefits of the project?

General POTTER. Oh, yes. It loses the revenue from that power during that period.

NEED OF POWER

Mr. HAND. Where is this power going to go, and what is the need of the power in those particular areas?

General POTTER. The power survey that was completed during this last year by the Interagency Committee shows that by 1975 the power demands of the area will be close to 8 million kilowatts more. Federal power will, from these main stems, provide for 1.5 million of those kilowatts.

Power contracts for this Randall power are already made, and each month that we have to delay that has resulted in considerable repercussion from the REA's and other public utilities in the area.

We have had in the past more or less commitments to the Nebraska area based on the power that would come from both Randall and Gavins Point.

Mr. HAND. Where is the power going to be sold?

General POTTER. It will be sold and used in the Iowa, Nebraska, and South Dakota areas.

Mr. HAND. To what industries and towns, for example?

General POTTER. Sioux City, Yankton, Omaha, and the intervening towns between Omaha and Yankton.

Mr. HAND. In the nature of REA consumption?

General POTTER. Yes. As the chairman knows all of the power in Nebraska is public power.

I have a statement on power if you would like to include that in the record.

Mr. HAND. Will you insert it, please?

(The statement referred to follows:)

JANUARY 7, 1954.

STATEMENT ON POWER

The main-stem reservoir system in Montana and the Dakotas is being planned and constructed primarily to stop floods. The captured floodwaters will be released gradually during low-flow periods to help irrigate farms, provide water for towns and cities, reduce pollution, provide sufficient depths for navigation, and develop huge blocks of low-cost hydroelectric power.

Starting with the great Fort Peck Reservoir in eastern Montana, which has been in operation since 1938, this system extends through the Garrison Reservoir in North Dakota, the Oahe, Big Bend, and Fort Randall Reservoirs in South Dakota, on down to Gavins Point on the Nebraska border just above Yankton, S. Dak. All are under construction except Big Bend.

The storage capacity of these reservoirs totals about 75 million acre-feet, or about 3 times the average annual flow of the Missouri River at Gavins Point. This tremendous storage capacity in combination with the backbone high-voltage transmission lines which will connect the power plants of all of these reservoirs, will permit flexibility of operation to achieve the maximum possible benefits from the regulated waters.

The powerplants for these 6 projects will have a combined capacity of 1½ million kilowatts, and will generate an average of about 7 billion kilowatt-hours annually. This is about one-half of the total Federal capacity now authorized for development in the entire Missouri Basin.

The transmission system now under construction includes a backbone system of 230-kilovolt lines connecting the main-stem plants and extending to the principal load centers.

Detailed data on power generation at the main-stem plants follows:

	Initial	Ultimate	Date for initial generation	Date for ultimate installation	Ultimate annual energy in millions kilowatt-hours		Dependable peaking capacity kilowatts
					Firm	Total	
Fort Peck	85,000	165,000	July 1943	1959	525	924	114,000
Fort Randall	320,000	320,000	February 1954	1956	648	1,254	215,000
Garrison	240,000	400,000	April 1955	1958	867	1,712	250,000
Gavins Point	100,000	100,000	October 1956	1957	357	617	25,000
Oahe	170,000	425,000	1961	1963	841	1,904	304,000
Big Bend	40,000	120,000	1964	1966	307	568	120,000
Total	950,000	1,530,000			3,545	6,979	1,028,000

RELATION OF FEDERAL HYDROPOWER TO POWER REQUIREMENTS OF THE BASIN

A power study of the Missouri Basin Interagency Committee, prepared by a group consisting of the Federal Power Commission, the Bureau of Reclamation, Corps of Engineers, and representatives of the States and utilities of the basin indicate that power requirements and median-year output of the authorized Federal hydroelectric system measured on the basis of December peak are as follows:

[In 1,000 kilowatts]

Year	Power requirement of basin power area (exclusive of Missouri and Kansas)	Peaking capability under median-year conditions [1]	
		Main-stem plants	Total Federal hydro
1954	3,800	216	535
1955	4,100	451	779
1956	4,400	587	1,017
1960	5,600	789	1,596
1965	7,200	1,170	2,073
1970	9,400	1,171	2,295

[1] Adjusted to reflect changes in installation schedules in main-stem plants made subsequent to MBIAC study.

Mr. HAND. You gave us a very encouraging statement last year that you expected to give us some cost reductions in the amount of $8 million this year.

Now in the hearings last year, and I am sure you are quite familiar with them, on page 652, and I quote from your testimony:

I feel next year when we come in we will be able to present probably some startling cost decreases on this project.

Where are they; are we to wait for them until next year?

General POTTER. The $8 million out of $60 million I think is startling.

Mr. HAND. It is startling, but have we got to wait until next year?

General POTTER. I am happy to tell you—you see that we have to turn in our revised cost estimates for the projects to the Chief of Engineers in May, and we had not evaluated the lands and the impact of that quite considerable saving, we have made in that last contract, but the fact that it is now let, and that there are relatively minor other things to let, we believe that that $8 million is sound.

Mr. HAND. We will be looking forward to the formal confirmation on it. Does that result because of better bids?

General POTTER. Yes.

Mr. HAND. I suppose to some extent to the new land policy?

General POTTER. But largely to more competitive bid structure.

FORT RANDALL RESERVOIR, S. DAK.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$18,668	$24,888,199
Dec. 31, 1953	1,809,980	13,481,490
June 30, 1954 (estimated)	None	3,823,800

STATEMENT OF AVERAGE ANNUAL BENEFITS

The Fort Randall project is the farthest downstream of the major reservoirs on the main stem of the Missouri River and the flood storage in that reservoir will be of great value in controlling downstream flows. During the period 1942 to 1952, inclusive, flood losses and damages along the main stem below Fort Randall Dam amounted to approximately $550 million. The average annual evaluated benefits that will accrue from the operation of Fort Randall Dam based on the downstream Gavins Point Reservoir being in operation to permit unrestricted peaking operations of the Fort Randall powerplant are summarized as follows:

Flood control	$1,498,000
Power: Values used for capacity and energy are $26.53 per kilowatt of capacity and 4.04 mills per kilowatt-hour of energy	10,284,000
Conservation	3,596,000
Total benefits	15,378,000

Average annual charges: The average annual charges are estimated at $9,221,000.

Data on continuing contracts

Description of Work:	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Highway relocations, State and United States	$7,123,100
(*b*) Spillway, stage I	8,200,700
(*c*) Earthwork, stage V	5,680,500
(*d*) Railroad relocations, Chicago, Milwaukee, St. Paul & Pacific Railroad, stage II	2,775,000
(*e*) Railroad relocations, Chicago, Milwaukee, St. Paul & Pacific Railroad, stage V	27,500
(*f*) Spillway, stage II	8,557,800
(*g*) Monorail equipment	30,200
(*h*) Penstocks and surgetanks	8,801,200
(*i*) Regulating gate	110,500
(*j*) Regulating gate hoist	42,500
(*k*) Stoplogs, lifting beams and bulkheads	64,500
(*l*) Powerhouse superstructure	14,290,500
(*m*) Generators 1–4	4,530,000
(*n*) Generators 5–8	4,812,000
(*o*) Turbines 1–4	2,933,000
(*p*) Turbines 5–8	3,218,000
(*q*) Governors	305,000
(*r*) Main leads and neutral switchgear	693,000
(*s*) Main control boards	456,000
(*t*) Power transformers	1,254,000
Proposed for fiscal year 1954 but not yet in force:	
(*a*) Building relocations, Fort Thompson Indian School	330,000
(*b*) Building relocations, Cow Creek headquarters facility	52,000
(*c*) Road relocations, Fort Thompson southeast road	56,000
(*d*) Road relocations, Fort Thompson Shelby bus loop road	53,000
(*e*) Erosion control, section III	130,000
(*f*) Switchyard-carrier current equipment	165,000
(*g*) Boats and equipment	77,000
(*h*) Office and laboratory equipment	5,800
(*i*) Tractors, cranes, mowers, etc	58,000
Proposed in fiscal year 1955:	
(*a*) Fish facilities	50,000
(*b*) Precipitation and stream-gaging equipment	204,500

Mr. HAND. We will now take up Fort Randall Dam. This again is a multiple-purpose project, of course, including power, and I understand it is closely related in the use of power to the Gavins Point Dam, which we have just been discussing.

The total estimated Federal cost of this project is $189,485,000; the total appropriations to date total $164,397,700, and the amount re-

quested for the fiscal year 1955 is $17 million, which if allowed will bring this project to 91.4 percent of funding completion.

The balance to complete thereafter is $17,087,300.

General, again as we indicated before on the previous project this is a very important project, financially and otherwise and the amount requested is quite large, and if you will proceed with the detailed statement as to the status and the general justification of the completion of this project.

General POTTER. The picture upon which the fund expenditures are shown are on the exhibit before the committee.

You will note that it shows a pool of water already impounded. That pool at that time included about a million acre-feet. It is now close to 1.5 million acre feet, which brings it to the bottom of the power pool, from which we will start the generation of power in March, month after next.

This is an important structure. It is 160 feet high. To give you an idea of the further dimension, the spillway width, at crest is 1,000 feet. The diameter of the surge tanks, the little dot that you see, is 58 feet, and those surge tanks are 100 feet high.

So it is obvious that this is a large and important structure. The length of the pool is about 150 miles. The reservoir capacity will be 6,300,000 acre-feet. Normally a million and a half of this will be used for flood control alone, but due to the fact that Oahe is not yet finished some 3 million acre-feet will be kept for flood control until Oahe closure is made some time in 1957 or 1958.

The powerhouse is well along; the first unit will come in in March, and thereafter at about 4-month intervals, until the eight 40,000 units are in the plant. All of these units for the present plans are under construction and the delivery schedule is made.

The annual benefit-cost ratio with Gavins Point in operation, is 1.67, and a total of 115,838 acres are taken, or 85 percent are taken at the present time.

The funds will be used to carry on 42 existing contracts. Every major contract is let; in fact, only one more contract, for the regulating structure, of $321,000 is yet to come.

The funds will be allocated against these contracts as follows: the switchgear, $290,000, which will be 100 percent complete.

The power transformer, $173,000; that will be 100 percent complete.

Land acquisition, $266,000, almost 100 percent.

Turbines, $1.6 million, 94 percent, and superstructures, $2.3 million, which will be 91 percent.

Generators, $2.5 million, that will be 89 percent; the penstocks and surge tanks, $2.3 million, which will be 84 percent.

State highway relocation, $1.4 million and the last stage of the earthwork which is now under way, $2.2 million, and other contracts, 33 small ones, $3.8 million, for a total of $17 million.

The status as to funds, the unexpended balance at the end of 1954 is estimated to be $3,823,000. And I would like to call the committee's attention to the fact that the unexpended balance at the start of the year was $25 million, to which was added another appropriation of $11 million so we have had a good construction year. And I think the project is in fine funding state.

Mr. HAND. Give us a brief statement, General, for this year's record, as to the power requirements in the area, where you are going to sell the power, the needs for the power, and briefly at the same time some statement as to the character of the land, the towns and communities which are afforded flood-control protection by the project.

General POTTER. Yes. Before I start, may I commit myself to $3.5 million worth of savings on this project.

The power statement with respect to Fort Randall is practically the same as that for the previous Gavins Point project, since they do work as a team and they will operate together to produce the power for practically the same areas.

Of course, the power from Fort Randall is expected to find its way into South Dakota, and in fact, some of it is going as far as Rapid City, which is about 200 miles to the west. They have powerlines to Rapid City; those lines are finished and the first power will go on those lines.

There is a good chance that some of this power will get as far away as Minnesota, because the present REA structure in South Dakota is tied in with the power production from the Northern States Power Co., which is largely established in Minnesota.

The REA's in this area are numerous, and they even have one distributing REA that covers practically all of the counties east of the river, that is called the East River Loop.

FLOOD PROTECTION

Mr. HAND. Will you give us a brief statement then as to the protection afforded from floods in this area?

General POTTER. Fort Randall is our fine control faucet. The big impoundment areas are, of course, Fort Peck, Garrison, and Oahe.

The Fort Randall flood-control pool is supposed to take care of a drainage area below Oahe only as a separate entity. And with its 1.5 million will be able to do that and still take care of its position in the system, by which I mean, it can take water up above and hold it until it can be used profitably for generation. During last year we have used it as a faucet to keep the river at just the right level all the way down. And I would like to show one chart on that operation. That is a small one. This is directly comparable to the way it will be handling the water when it is finished.

This shows the effect at Omaha. The flow without the reservoir would have been that small part down below that line which Mr. Johnson is indicating.

That big grey area, up above, is the water that we let out at Fort Peck. And I would like the committee's attention to be called to the fact that that resulted in a fairly even flow. There is 1 small drop there, but it does show that Fort Peck, 3 weeks away from Omaha, can be released on a predetermined schedule that will result in an even flow.

Now the effect of Fort Randall is that much darker area, where we, less than a week away from Omaha, were able to put pieces, bigger pieces of water in the flow and keep the flow even.

That is about the way it will operate after Oahe is in. Although we will not have the exact volume control, because of the fact that so much of Fort Randall volume, 3.5 million acre-feet, will have to be kept for flood control until Oahe is finished.

That, of course, cuts down the head that can be used to generate power, and cuts down the amount of water that can be used to regulate the flow downstream.

It rather looks as if we will have to control the lower river with Montana-Wyoming water that comes into Fort Peck and Garrison for as least several years more.

Mr. HAND. Now, give us a brief statement of the general protection afforded, the additional flood control, and the extent of the acreage.

General POTTER. There is 1.5 million acres downstream from Sioux City that will be protected by the levees which are to be built in the future. The height of those levees, Mr. Chairman, are based upon the water being retained in the Fort Randall and above.

Without these reservoirs in, Fort Randall, is the one that really controls the last outlets, and without these reservoirs we could not justify levees being built along the bottom. But these reservoirs with the levees will protect 1.5 million acres and will give us this steady flow down the river.

The communities, of course, are much more valuable, dollarwise than the present value of the agricultural land. For example, the damages in Omaha which could result from overflow would amount to $60 million or more.

Sioux City which was severely damaged by the Floyd River flood, could also be flooded by the Missouri River. The potential damage area in Kansas City by a flood coming down the Missouri River is close to a billion dollars. And of course, we have many smaller communities like Leavenworth, St. Joseph, Nebraska City, Yankton, and others that are subject to flood damage.

Mr. HAND. As I understand, it is only because of this dam, and reservoirs, this series, that you are able to justify at all the construction of the levees.

General POTTER. That is right.

Mr. HAND. The levees would have to be too big, if it were not for these developments.

General POTTER. And they would have to be set back so far that much valuable land would be outside the levee.

Mr. HAND. Generally speaking, what is the nature of the work remaining to be done after fiscal 1955?

General POTTER. Completion of going contracts, Mr. Chairman.

Mr. HAND. Everything is started; it is just a continuation of the present contracts?

General POTTER. Yes; continuing contracts.

Mr. HAND. You have a community there called Pickstown?

General POTTER. Yes.

Mr. HAND. What was the status of that? The proposal, as we have understood it, is that eventually it would be integrated as a separate community and made a part of the State.

General POTTER. We are engaged at the present time on an extensive study of how best to treat that.

Naturally, the State hates to lose that community, and I would like very much, as I told the committee last year, somehow or other to affect a way by which it could become a taxpaying community. There will always be in the neighborhood of 100 Government employees running the powerhouse and reservoir, but that still leaves the big community center facilities, the church, hospital, and the school, and a capacity for housing, I would say, of 1,000 people. Now the problem that has come up——

Mr. HAND. Excuse me; about how many residences are in this community?

General POTTER. Two hundred and fifty. They are not all permanent. In fact, as I remember, there are only about 70 permanent.

I have examined some of the towns of a similar size in the Dakotas in the neighborhood of 2,500, or something like that, and it becomes evident right on the face of it that the people in those towns do not have the taxing wealth to keep up the streets, fire departmens, schools, and so forth as they exist in Pickstown. And I have doubted that we will find anybody in the State that will be willing to buy the town and operate it. That is impossible, I believe, and there will be a series of years before there will be enough industry in there to even support a part of the town.

I had hoped to be able to come up with some sort of recommendation fairly soon to the effect of how we should operate it. Because I really would hate to turn over the surplus buildings to an agency, purely to dispose of them, because our return would not be great and the State would lose a great potential from tax returns.

Mr. HAND. The problem is still with you, and you have not arrived at a recommendation solution as yet.

General POTTER. No, sir.

Mr. HAND. Are there any communities nearby?

General POTTER. Lake Andes, which is about 7 miles away, is a thriving community. It is a typical small town of about 1,000 to 1,500 people. They have very few streets—only one paved street—and they cannot support community facilities that are demanded in a town of this size.

FORT THOMPSON INDIAN AGENCY

Mr. HAND. General, do you still have the problem with the Fort Thompson Indian Agency?

General POTTER. Last year the appropriation bill directed us to do some work on that.

Mr. JOHNSON. We have been working on that, and have worked out an agreement with the Indian Service which has just been approved by the Secretary of the Army and the Interior Department. It provides for our relocating certain facilities at a cost equivalent to the cost of the levee protection that we would have provided around Fort Thompson.

Mr. HAND. How much did that amount to in dollars?

Mr. JOHNSON. As I recall it, it was about $700,000.

Mr. HAND. Will you check that, and if that is not correct will you put the correct amount in the record?

Mr. JOHNSON. Yes.

(The information requested is as follows:)

The relocations which are agreed to amount to about $730,000. In addition properties estimated at $80,000 will be purchased.

FRIDAY, JANUARY 29, 1954.

OAHE RESERVOIR, S. DAK.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$567,463	$971,598
Dec. 31, 1953	2,355,280	7,027,337
June 30, 1954 (estimated)	None	4,814,559

STATEMENT OF AVERAGE ANNUAL BENEFITS

The project is located about 6 miles northwest of Pierre, S. Dak, and provides flood protection along the main stem of the Missouri River downstream therefrom. The volume of flood storage available in the Oahe Reservoir, together with other resevoirs and the levee system downstream from Sioux City will control the severe floods on the Missouri River such as have so often occurred in the last century. Utilization of the combined flood-control storage of all dams will reduce flood flows to within the designed capacity of the agricultural and municipal levees and the flood walls along the Missouri River below Sioux City. During the period 1942 to 1952, inclusive, flood losses and damages along the main stem below Oahe Dam amounted to more than $550 million. Average annual evaluated benefits that will accrue from the operation of Oahe Dam and Reservoir are summarized as follows:

Flood control	$2,123,000
Power:	
Values used for capacity and energy are $24.18 per kilowatts for capacity and 3.68 mills per kilowatt-hour for energy	13,685,000
Water conservation	5,360,000
Total benefits	21,168,000

Average annual charges: Average annual charges are estimated at $14,985,000.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force:	
(a) Earthwork stage III	$5,658,000
(b) Intake and upstream tunnels	10,400,000
Proposed in fiscal year 1954 but not yet in force:	
(a) Road relocation, South Dakota Highways U. S. 212 and 12	10,867,000
(b) Bulkheads and frames	60,000
Proposed in fiscal year 1955:	
(a) Railroad relocations, Chicago, Milkaukee, St. Paul and Pacific RR. Co	24,940,000
(b) Earthwork stage IV	9,248,500
(c) Control shafts	8,530,000
(d) Gates, guides, and hoist	1,080,000
(e) Downstream tunnels	10,400,000
(f) Stilling basin	6,900,000

Mr. DAVIS. The committee will resume this morning with the Oahe Reservoir in North and South Dakota, where there is an estimated total Federal cost now of $306 million. The appropriations to date, including $8.25 million for the current fiscal year, have been $24,605,000.

The appropriation request now before us for the fiscal year 1955 is in the amount of $9 million, which will provide a cumulative total of 11 percent of the required funds.

Last year, General Potter, you gave us an estimate of a little under $294 million for this project. What is the basis upon which the estimate has increased by something over $12 million?

General POTTER. The increase is entirely due to price-level increases as measured by the cost index, and has been applied across the board, because of the relatively small amount of money that has been allocated to this project so far. We have had very little bidding experience on this project and the schedule for future appropriations, of course, is unknown. We feel that the only sound way at this stage is to apply the cost index rise to the estimated cost.

Mr. DAVIS. How much work have you actually put in place at Oahe?

General POTTER. The costs at June 30, 1954, will be $19,971,000. They were $15,583,000 on June 30, 1953. That is work now in place, Mr. Chairman.

Mr. DAVIS. Physically, what have you been able to put in?

General POTTER. We have built the access road, the access railroad, and we have built a section of the dam on the right abutment as being indicated by Mr. Johnson.

The section to the extreme right is to the full height of the dam. The stage III earthwork now under contract will extend the section already built. In other words, Mr. Chairman, we are building the dam from the right abutment out into the stream. We also awarded a contract for the upstream tunnels, getting an advantageous bid. The firm has established its local office and is engaged in designing a new and different type of tunnel-excavation machinery which will enable them to excavate without explosives.

To give you an idea of the size and length of those tunnels, shown in red on the map, from the intake to the end of the construction, which is at the location of the regulating gates, is 1,690 feet; and the lower tunnels downstream to the spillway basin, 1,800 feet.

Mr. DAVIS. Right there, General, just a little bit to the left of that point, which says "control shaft," is where we stood last year?

General POTTER. Right at the end of the completed fill.

Mr. RABAUT. What kind of soil is encountered there?

General POTTER. Shale.

RELOCATIONS

Mr. DAVIS. General, tell us what you can about the status of the relocation, by terms of agreement and in terms of construction, first, with respect to railroads?

General POTTER. Very little has been done on relocations. We are proceeding in a manner similar to that at Fort Randall. In other words, for relocating highways, Mr. Chairman, we are entering into an agreement with the State of South Dakota. We have already done most of the negotiation. We will agree with the highway department, as to the highways to be relocated, what crossing will be required, and we will contract with them to design and build the relocated highways, and we will reimburse them under a procedure similar to that we followed at Fort Randall.

Preliminary negotiations have been conducted with the railroad—there is only one railroad concerned—the Milwaukee at Mobridge.

The highway crossings over the Missouri River which we propose on this reservoir are at Mobridge and Forest City.

Mr. DAVIS. Are you going to have a highway across the top of this dam?

General POTTER. Yes.

Mr. DAVIS. Do you have any particular problems with respect to utilities relocation?

General POTTER. No. The utilities that exist in the bottom of the area that might be flooded, will be relocated, if legally entitled to such relocation.

FORT YATES INDIAN RESERVATION

Mr. DAVIS. Are there any settled communities of any significance that will be in the reservoir area that will involve any relocation problems in that connection?

General POTTER. The Fort Yates Indian Reservation.

Mr. DAVIS. Will you tell us the status of it?

General POTTER. The negotiations with the Indians on this project—there are two tribes involved, both tribes of the Sioux Nation.

The law which Congress passed 2 years ago required that we try to negotiate a contract with the Indians for the relocation. We were unsuccessful in arriving at a complete conclusion with either one. The matter has been reported to the Appropriations Committee or the Congress with all the figures, as to what is being done. Last year in my testimony before the Senate I was asked my opinion, and I stated that I felt that the arriving at the figures representing intangible benefits to be paid was in my opinion a matter for the Congress to decide. The matter involves human feelings, and things upon which an engineer cannot put a dollar sign.

Mr. DAVIS. You told us that the negotiations had practically come to a standstill as of last year. Has there been any reopening of those negotiations since that time?

General POTTER. No. We have carried on with the Standing Rock tribes to arrive at an agreement with them on a set of figures with reference to land alone. And I believe that agreement has been reached, but it is my opinion that the total amount that has been requested by the Indian nation has not.

Mr. DAVIS. With reference to this constant rising price: Last year you gave the committee an increase estimate of some $7 million, and this year something over $12 million. That is of considerable concern to the committee. I just wonder, generally if these represent arbitrarily increases in figures, based purely on an arithmetical computation, or are they based upon an actual contract experience on the site?

General POTTER. In this case, last year and this year both, they are based on purely an arithmetical application of the construction index and do not reflect the bidding experience that we have had at Garrison, Fort Randall, or Gavins Point within the last 2 years, where the prices have trended downward, due to increased competition and greater production from labor. But there is so much money yet to come on this project, Mr. Chairman, that I do not think we could come to you and say that a similar condition would exist when we get into

the big work on this project. We may be able to lower the prices substantially, but that cannot be promised now.

Mr. DAVIS. Suppose that you put in the record, if you will, a set of tables showing your estimates compared to the actual contract prices on major contracts which have been let on the Oahe Dam.

General POTTER. The Oahe project alone?

Mr. DAVIS. Yes.

General POTTER. I will be glad to do that.

(The information requested follows:)

Bidding experience on Oahe project

Contract	Award date	Contract amount	Government bid estimate [1]
Stage I, earthwork	May 1950	$2,280,717.50	$2,382,000
Stage II, earthwork	February 1952	2,228,354.50	2,479,000
Stage III, earthwork	August 1953	5,143,152.00	5,348,000
Intakes and upstream tunnels	November 1953	9,459,584.25	8,239,000

[1] These Government estimates represent the estimated cost of performing the work and do not include an allowance for profit.

Funds Requested for 1955

Mr. DAVIS. What is proposed to be accomplished with the $9 million requested for 1955?

General POTTER. $1,560,000 will be applied against the existing contract for earthwork, stage III, represented in the red portion on the diagram now being pointed out.

$2,305,000 will be applied against the existing $10 million intake and upstream tunnel contract.

$1,630,000 will be applied against earthwork, stage IV. That contract will not be advertised until late in the fiscal year.

Mr. JOHNSON. That contract is not shown on this map; it is on the other side of the river.

General POTTER. $125,000, gates, guides, and hoists, which will not be advertised until late in the year. We allocate nothing against control shafts and downstream tunnels, because the requirements are so large and $9 million would allow us to allocate to them a very small total amount, unless there is a clear indication that the Fiscal Year 1956 amount will be substantial, I do not feel we would be justified in letting these contracts. We do, however, propose to advertise this summer or fall, for the stilling basin. That contract will have a value, we think, of $6,900,000.

We propose to allocate against South Dakota highways, $85,000 for continuing on negotiation, primarily the plans for the highway relocations.

The other contracts are $1,025,000.

General POTTER. The large amount of work that is still to go on this project and since there is no clear indication as to the speed with which it will go, we have been working with several programs, based on normal operations, and based on slow operations.

With the proposed appropriation for the next year the studies we have made indicate that we should not, with such small appropriations, start the control shafts and downstream tunnels during this next year, unless there is a clear indication that the Fiscal Year 1956 appropria-

tion will be very substantial, but that we should start the spilling basin and then start the earthwork, stage IV.

Mr. DAVIS. What is your estimated completion date at this project, and how is the power schedule coming along?

General POTTER. The first power is scheduled to come on the line December 1961; closure would be in 1958.

Mr. DAVIS. Do you consider an economic rate of construction would be something substantially greater than the rate that you are now proceeding?

General POTTER. Oh, yes. Due to the fact that we were going into the tunnels, it has been necessary to put highly qualified technical people on the job. Up until this year we have had the job run by earthwork people. The resident engineer has been required to draw up an ultimate table of organization and to break that down into increments of people that he will need, based on certain rates of progress; and we have, I think, been quite successful, Mr. Davis, in assigning highly qualified technical people that we will need for the project. We have transferred several key people from the Garrison project to the Oahe project.

RELATIONSHIP TO OTHER PROJECTS

Mr. HAND. The dam itself is related to what other reservoirs?

General POTTER. This dam is closely associated with Fort Randall and the importance of its construction, I believe, can be highlighted by this statement: The silt pool of the Oahe is supposed to trap some 48,000 acre-feet a year. Fort Randall is now closed, and the Oahe silt is going down into Fort Randall. If it continues to go on for many years it naturally will decrease the silt capacity of Randall, which has previously been calculated for about a hundred years; and it will be reduced by the amount of the Oahe silt which is trapped in that pool.

That is very serious; and equally serious is the fact that we have to increase the flood-control storage at Fort Randall by 1.5 million acre-feet until Oahe is in operation.

Mr. HAND. Is Oahe related ultimately to any other projects except Fort Randall?

General POTTER. It is, in the use of power generation; it is a part of a generating team, and the operation of the generators on all projects is planned to be integrated.

Mr. JOHNSON. After Oahe was started, Mr. Hand, we made very substantial reductions in the size of the spillways at Fort Randall and Gavins Point because of the tremendous storage in the Oahe project. It resulted in a saving in the nature of 25 to 35 million dollars.

Mr. HAND. Other than what has just been referred to, the acceleration of the silting, which you have referred to, General, is it true that in effect Fort Randall stands on its own, with reference to Oahe?

General POTTER. The three are a team; they are planned together. I believe I stated last year that if Oahe were stopped, dropped out of the program, I would feel that I would have to come to this committee and say that we would have to expand the spillway at Fort Randall and entirely change the concept of the intergrated plan. I am not prepared to say now what the change should be, because

the whole system would have to be reevaluated. The annual energy out of Oahe, after it is completed, is 1,900,000,000 kilowatt-hours of electricity. That is an enormous amount of electricity and power benefit to be involved.

Mr. RABAUT. How much water is going to be impounded here?

General POTTER. 23 million acre-feet.

Mr. RABAUT. What is the benefit-cost ratio?

General POTTER. 1.41 to 1.

Mr. RABAUT. You estimate the closure date as of 1958?

General POTTER. Yes.

Mr. RABAUT. Those are plans which you feel you will be able to meet?

General POTTER. Within the limits of our ability to predict the future years' appropriations; yes.

Mr. RABAUT. And the weather?

General POTTER. The first has much greater weight.

Mr. RILEY. This is a part of a system of the upper Missouri to impound waters and it is integrated into the other dams that have been built there.

General POTTER. Yes. While there are several reservoirs, in effect they represent one system of storage, generation, and water-use facilities.

Mr. RILEY. Each one would be incomplete without the other?

General POTTER. Oh, yes. We would have to reevaluate the entire system of operation and the distribution of power and water. There would be no irrigation in South Dakota without Oahe. The Bureau of Reclamation is working out the ultimate plan and now has good reason to consider that there will be approximately 1 million potential acres of irrigation out of this project.

Mr. RILEY. What other dams are you contemplating for this area?

General POTTER. We contemplate on the main stream, none except Big Bend and we do not have any plans to start that construction at the present time. Big Bend is essentially a part of the development of the program.

Mr. RILEY. You have in mind that you will operate it without Big Bend?

General POTTER. It can be operated without Big Bend. It does serve as a regulator of water.

GARRISON RESERVOIR, N. DAK.

Date	Unobligated balance	Unexpended balance
June 30, 1953	$1,648,741	$18,952,848
Dec. 31, 1953	6,621,060	22,198,014
June 30, 1954	1,008,600	6,854,000

STATEMENT OF AVERAGE ANNUAL BENEFITS

Garrison Reservoir, operating with other units in the comprehensive Missouri River Basin plan which will include a system of reservoirs and levees that will provide substantially complete protection to 2,000,000 acres of bottom land in the Missouri River Valley, will effect reduction in flood stages in the Mississippi River; and will benefit navigation on the Missouri and Mississippi Rivers by release of stored floodwaters during low-flow periods on those streams. During the period 1942 to 1953, inclusive, flood losses and damages along the main stem

of the Missouri River from the Garrison Dam to the mouth amounted to approximately $550,000,000. Average annual benefits from the project are currently listed as follows:

Flood control	$2,673,000
Power: Values used for energy and capacity are 3.65 mills per kilowatt-hour for energy and 823.99 per kilowatt for capacity	11,600,000
Irrigation	2,904,000
Navigation	2,207,000
Total benefits	19,384,000

Average annual charges: Average annual charges are estimated at $12,500,000.

Data on continuing contracts

Description of work:	*Total estimated contract earnings*
Continuing contracts in force:	
(*a*) Road relocations, Williams County	$199,300
(*b*) Road relocations, Lost Bridge to Kildeer Road	77,900
(*c*) Road relocations, Sanish Bridge superstructure	2,324,800
(*d*) Road relocations, Highway 23	81,100
(*e*) Railroad relocations, Sanish Branch trackage	1,016,200
(*f*) Railroad relocations, Snake Creek	714,000
(*g*) Railroad relocations, Sanish Branch grading and structures	445,600
(*h*) Utility relocations, telephone	85,100
(*i*) Utility relocations, communication system	36,000
(*j*) Building relocations B. I. A. schools, offices and miscellaneous buildings (2 continuing contracts)	1,422,000
(*k*) Building relocations, new town grade and high school	395,800
(*l*) Reservoir clearing, stage I (3 continuing contracts)	499,400
(*m*) Embankment, stage IV	15,550,700
(*n*) Embankment, stage V	18,568,400
(*o*) Spillway structure and gates	13,607,600
(*p*) Spillway, gate hoists	688,100
(*q*) Concrete aggregates	3,657,800
(*r*) Intake structure	15,975,000
(*s*) Regulating gates	1,128,000
(*t*) Trash racks	125,300
(*u*) Powerhouse and switchyard	10,650,000
(*v*) Penstocks and surge tanks	7,237,000
(*w*) Turbine governors	139,200
(*x*) Turbines	3,298,800
(*y*) Generators	5,881,700
(*z*) Main control switchboards	163,100
(*aa*) Station switchgear and transformers (2 continuing contracts)	261,500
(*bb*) 15 kilovolt switchgear and generator leads	321,100
(*cc*) Two 300-ton cranes	488,600
(*dd*) Draft tube gantry crane	45,900
(*ee*) Autotransformers	480,200
(*ff*) Main transformers	1,064,000
(*gg*) Oil circuit breakers (schedule A)	134,600
(*hh*) Oil circuit breakers (schedule B)	563,500
(*ii*) Oil filled pipe cable system	229,300
Proposed in fiscal year 1954 but not yet in force:	
(*a*) Road relocation, route 7	273,000
(*b*) Wildlife preservation, replacement of habitat	279,300
(*c*) Tree planting	55,000
(*d*) Miscellaneous operating equipment	191,300
Proposed in fiscal year 1955:	
(*a*) Relocations, Snake Creek embankment gates	25,000
(*b*) Reservoir clearing, stage II	296,200
(*c*) East abutment grouting, secs. II, III, and IV	630,000
(*d*) Spillway stilling basin	15,413,000
(*e*) Flow meters	7,800
(*f*) Water-level recorders	1,900
(*g*) 12.5-kilovolt connection to spillway	144,500

Mr. DAVIS. The next project is the Garrison Reservoir, N. Dak.

The total estimated Federal cost is $289,854,000. There have been appropriations to date, including $2,715,000 for the current fiscal year, of $206,680,700, and we have before us a request for $27.5 million for the fiscal year 1955, which will provide a total of 81 percent of the necessary funds for this project.

General, I notice that while the overall estimate has remained constant since last year the up-to-date planning report, which we have before us, indicates an estimated decrease in construction costs of something over $2 million. Then an increase in land costs of about $1.8 million, an increase in relocation estimates of about $415,000. Will you explain that to the committee, please.

MINERAL RIGHTS

General POTTER. The cost of land has increased due to the discovery of oil in the area. To give you an example of that: oil leases in the early days, say 3 or 4 years ago, could be bought pretty cheaply, but oil leases at this time are going as high as $600 to $1,000 an acre. While we are not now buying the land with the mineral and oil rights, there has been consideration given to this value by the courts, and that results in an increased cost of that land, because a great deal might be oil producing.

I can say it this way: last year, for 85 percent of the land we had to pay what we thought of as 100 percent of the costs that were in the program.

There will be a decrease in the cost of Garrison in the next estimate that I submit to the Chief of Engineers for approval.

Mr. RILEY. Is it feasible to drill for oil under the water in this reservoir like they do in other areas?

General POTTER. Yes, it is; and that is the way they are doing it elsewhere. It is possible to drill on a slant up to about 30°, I believe, from vertical.

Mr. RILEY. To whom do the mineral rights belong if you purchase this land that is included in the reservoir?

General POTTER. To the original owner.

Mr. RILEY. In the reservoir itself?

General POTTER. Yes, in the reservoir. For the first part of the program we bought the lands outright. There have been some actions with a view in mind of letting the people buy back the mineral and the oil rights. How that would be done has not been determined, but there is some thought being given to it.

Mr. HAND. Never let the Government have any benefit of what it has.

Mr. RILEY. I am just wondering whether or not you could get a more favorable price on the land by reserving the mineral rights to the owners.

General POTTER. No. The last judgments I have seen by the Federal courts in that area indicate—I saw one where they were 40 percent over what we had offered

Mr. RILEY. If they are reserving the mineral rights it looks to me that should be taken into consideration in the price.

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General POTTER. When we cannot reach an agreement with the landowner our next recourse is set. We must request judgment on the land and send it to the Department of Justice to try the case.

Mr. DAVIS. Mr. Rabaut suggests that it would be interesting to know what portion of the lands you have purchased in fee, include the mineral rights? Do you have that information with you this morning, or perhaps you could furnish it for the record?

General POTTER. I can furnish it for the record.

Mr. HAND. I think the committee would be interested to know how many acres you now hold which has the mineral rights, and which the Government owns the mineral rights.

Mr. RABAUT. How many acres and how many of the other where you do not hold it.

General POTTER. I think we can furnish that.

(The information requested follows:)

	Acres
Land purchased to date with mineral rights	326,000
Land purchased to date with owner retaining mineral rights	94,368
Total	420,368

NOTE.—In addition there were 15,257 acres of public domain transferred to the project on which the Federal Government holds the mineral rights.

STATUS OF PROJECT

Mr. DAVIS. Generally speaking, what is the status of the project at the present time?

General POTTER. Every large contract but one has been let on this project. There is one still to come, the spillway stilling basin, which is the second half of the spillway, and without which the spillway is inoperative. That contract is for about $15 million. I do not feel that I can advertise it under this appropriation until fairly late in the fiscal year. With the exception of that one, Mr. Chairman, every major contract is under way and the money that we are requesting will be allocated against existing contracts in these amounts:

For land acquisition, $1,200,000.

For relocation of Bureau of Indian Affairs facilities, $1,300,000.

For roads, county, State and United States highways, $1 million.

For stage V embankment, the part shown in red, now under way, $5,066,000.

For the spillway structure and gates, for which contract is now under way, and which I believe you saw this last summer, $1 million.

Penstocks and surge tanks, $2.5 million.

Powerhouse and spilling basin, $4 million.

Turbine, generators, and transformers, $4.5 million.

And some 17 other small contracts under way, $6 million.

Mr. DAVIS. Do you anticipate starting the fill of the reservoir this next calendar year?

General POTTER. We now have about 100,000 acre-feet in the reservoir, and we hope to be able to catch about 3 to 3½ million acre-feet during the summer.

Mr. DAVIS. When do you schedule the initial power?

General POTTER. In April 1955.

Mr. DAVIS. And your completion?

General POTTER. Essential completion of the project is scheduled for 1957.

Mr. DAVIS. Is there any particular significance to be attached to the estimated unobligated balance of something in excess of $1 million at the end of the current fiscal year?

General POTTER. The unobligated balance will be about $1 million, largely because of real-estate actions. I would like to call to the attention of the committee the fact that the unexpended balance on June 30, 1953, was $19 million, and at the end of the year we forecast it to be about $6,854,000, so we are doing a good job in bringing down the unexpended balances.

WILLISTON

Mr. DAVIS. It is very difficult for us to discuss the project without getting into the interrogations of the problem at Williston. I would like to call your attention to a statement which appeared in the Senate committee report for the current fiscal year with regard to the Garrison Dam, in which they mentioned the controversy over this pool level. They mentioned the protective works at Williston and the Bureau statement of the lake and land there for irrigation. The Committee states as follows:

> It is the sense of the committee that before any such expenditures are made the Corps of Engineers should proceed promptly with definite construction plans for proper protective works pertaining to the project to meet the requirements in Senate Document 247, 78th Congress, and report the same to the Congress for review.

What has been done on that report, General?

General POTTER. The report is ready and a copy will be submitted to the committee immediately.

We have done a considerable amount of work on this general project within the last 2 years in response to the Senate committee's instructions, and if the chairman desires I will go a little bit into details on the problem itself.

Mr. DAVIS. I think we would appreciate having some of the details, because I am sure there will be some discussion of the problem at some later time.

General POTTER. Yes. This project was authorized in Senate Document 247 in 1944.

The map that went with that report showed the reservoir extending past and above Williston and indicated a proposed height. It did, however, say that the capacity of the reservoir would be 17 million acre-feet, approximately, which figure had been arrived at by making a preliminary study of the then existing maps, which did not cover the entire area of the reservoir. Subsequent studies showed, with complete maps, that the capacity would be 23 million acre-feet at the originally planned operating level of 1,850 feet. House Document 247 did, however, require that the final storage capacities to be selected for the five reservoirs would be agreed upon after more detailed plans and cost estimates had been made.

In August of 1945 at a meeting of the Interagency Committee, at which the then 3 State representatives were present—at that time the representatives of the governors represented all 10 of the States—and the Federal agency groups was held in Omaha on August 16, 1945. The

case for the capacity of this reservoir and its method of operation was presented. Then Governor Aandahl of the State of South Dakota and representatives of citizens from Williston who objected to the height were heard. The committee, including Governor Aandahl, however, unanimously agreed that the dam should be built and operted at a normal operating level of 1,850 feet.

On June 1, 1953, the Department of the Interior, in a letter signed by Ralph A. Tudor, the Acting Secretary of the Interior, sent to the Corps of Engineers, stated:

The Bureau of Reclamation feels that the Garrison Reservoir should be operated at a maximum normal pool elevation of 1,850 feet above sea level as proposed by the Corps of Engineers.

On January 16, 1954, after a meeting in Williston at which Governor Brunsdale presided and at which I presented the plan we are about to give the committee, the Governor wrote a letter to the district engineer which said:

It is the opinion of the chief engineer of the State water conservation commission who has had an opportunity to review these plans with your engineer and consultant staff at Riverdale, that the engineering design for the proposed levees, dikes, and other appurtenant works are adequate to protect the present irrigation projects now being operated.

In a previous letter of January 13, 1954, the Assistant Commissioner and Chief Engineer of the Bureau of Reclamation reviewed our plans and generally approved of them, although he did indicate that they might differ on some of the details. He indicated that we could easily arrive at an agreement on such details later.

So we have followed out the direction of the Senate and the House in the original authorizing documents and we do have an agreement from the States, from every Governor of the State of North Dakota, the Interagency Committee, and the Department of the Interior, that the operating level of this dam should be 1,850 feet.

Now, to show how this will be done, I would like to exhibit two charts. This first chart shows a filling plan for Garrison based on average water years. We are now in 1954 and propose to build up to that 5 million acre-feet before April 1955.

Over subsequent years, up through 1961, the reservoir will gradually get higher until it gets to a normal operating stage in about 1961. That is based on normal water years. The minimum operating pool, as the committee can see, is 1,775 feet and the top of the normal pool is 1,850 feet. At the beginning of each flood season the reservoir will be no higher than 1,838 feet.

The next chart will indicate operations over a 55-year period. We took our water records for the last 55 years, which are pretty complete, and operated Garrison based on the water we got through those years.

The plan of operation generally is this: That we will try to keep the reservoir at least at 1,838 feet as much of the time as we can. We will catch the spring floods between 1,828 and 1,850 and rather than dump that water as floodwater and waste it, we plan to run that water through the generators, to irrigate with it, and to discharge it for abating pollution and other uses. But for 55 years, these startling facts appeared. No. 1, we do not think it would quite have reached 1,850 feet in any one of those years; that only 3 percent of the time would the water be as high as 1,848. In other words, about a week and a half a year on

the average it would be that high. That only 6 percent of the time would it reach 1,845, and only 13 percent of the time would it be at or above 1,840. So over that 55-year period, the 1,850-foot level would not be expected, although there are 4 more feet for the super floods should they occur.

You will notice the operation of the reservoir in a long drought period. Starting in 1931, due to low water years, we got down as low as 1,780 in 1940; then, of course, starting with the wet years in 1942, we build back up again to the normal operating level.

Some other facts appear when you consider what would happen if the reservoir were operated even 10 feet lower. We would lose 3.6 million acre-feet of storage; over 3.5 million acre-feet of storage water that could not be retained; we would lose the best and the cheapest storage. The cost of storage in this reservoir up to 1,840, for instance, is $14.60 an acre-foot; the cost of storage from 1,840 to 1,850 is only $2.09 an acre-foot. The annual loss in power would be almost $1 million, and the total losses of power, irrigation, the increased cost for diversion and the loss of power at the downstream dams, would be over $1.5 million.

The amount of water represented by that 10 feet over the 55-year period shown on that chart is 67.8 million acre-feet, or more than the capacity of all the main stem dams. Now the irrigation demand in the area will be, we feel, somewhat in the neighborhood of 2.5 million acre-feet a year. The higher the water is kept, the cheaper it is to pump into the irrigation area, and the cheaper it is the less it costs the people to irrigate.

Now, as to the protective works that we have worked on a great deal this year. There are three separate areas to be considered. No. 1 is Williston. Williston is a very thriving town at the upper end of the reservoir. Due to oil discovery, its population since 1950 has risen from 7,000 to over 10,000 people. It has certain boom-town aspects, but the people are taking the increased wealth with a great deal of equanimity and I believe are planning the extension of their town wisely. Most of the city is on a bench and above flood level, but some of the outskirts and railroads do dip down into the flood plain. The Great Northern Railway is down in the flood plain.

The Lewis and Clark Irrigation District is affected and also the lower end of the Buford Trenton Irrigation District.

In the Lewis and Clark Irrigation District, which was built in 1938, they have an irrigated acreage of 4,800 with a gross acreage of 7,700. We estimate the value of the lands and improvements at about $1 million.

In the Buford Trenton Irrigation District, which consists of 3 sections, there is gross irrigable land of 11,000 acres, and in the east bottom area which we propose to protect, there are only 2,800 acres. The gross acreage in that unit is 6,200. The estimated value of the lands and improvements in the east bottom unit is something under $1 million.

The pool at 1,850 feet will flood the lower parts of those various benches, but the problem that is troubling us, and upon which we have done a great deal of work this year, has to do with aggradation that might come due to the dumping of some of the silt in the upper reaches of the area, with the consequent building up of the bottom and increase the heights of water in that particular area.

The same sediment board that I described yesterday has worked with us very closely on this problem, has approved our findings, and has indicated that in a signed document.

The protection required at Williston is a rolled earth levee 8½ miles long, slightly less than 20 feet wide, with its top about up to 4 feet higher than the lowest part of the railroad tracks at the present time. We have drilled out the foundation; we know what the foundation is; we know the levee can be built there just like all agricultural levees are built farther down the Missouri River and similar to the levees built down the Mississippi and in many other places across the country.

I would like to state here there is no question that safe and adequate levees can be built as planned for this community. The estimated cost of the Williston levee is $4,320,000, and it provides complete protection to the city and to the railroad.

For the Lewis and Clark Irrigation District, we propose a 9-mile rolled-earth levee with an average height of about 15 feet. The foundation is exactly the same as that around Williston, which is river-built bench. There are a few places where riprap will be placed. We do need to put pumping plants in this particular area in order to control the height of the ground water.

As the committee knows, if the ground water gets too high, the root structure of the crop rots and you do not get a crop. So, with a high river, it is going to be necessary to pump in order to keep the ground water low enough to raise crops. With the pumping system and the levee, the irrigation district can live just as well as it can live at the present time, without any increased cost on their part. With the pumping system we can and do propose to keep the ground water 5 feet lower than the normal surface of the ground. The cost of this particular levee and appurtenant works is $3,540,000.

The proposed protective work for the east bottoms area of Buford Trenton Irrigation District is a 10-mile levee, 94 wells, at an estimated cost of $4,630,000. We have planned the height of those levees based on aggradation under the most adverse conditions, and we feel that aggradation will not happen for many, many years to come. However, under extremely adverse conditions with a build-up some years in the future, generations in the future, we visualize there is a possibility that these levees might have to be built to a higher level later on and we do have a plan for that situation if it should ever rise. But we feel that the present plan which provides for 5 feet of aggradation will last long beyond the memory of anybody who sits in this room, and we are not proposing any authorization, nor are we asking for any funds, for any possible future protective works. As a matter of fact, in the 1955 budget which we are considering here today, these funds as they pertain to the Williston project are, for planning, $414,000; land acquisition, which has been deferred during the past year due to instructions in the Senate report, $1.5 million, and nothing for construction.

There has been some suggestion that we defer the building of these levees until it has been proven they are absolutely necessary, or wait until we have operated the reservoir for a few years to see how it works out. We think we know how the reservoir is going to operate under normal years, under dry years, and under wet years. It is going

to take 3 or 4 years to build these levees under normal appropriation actions and we do not think we should wait until it is too late and then suddenly have to go into a rush job at increased cost when it will not be necessary, because we can go ahead and start next year on this construction.

The people of Williston, the people in the irrigation districts and in that area are not going to be hurt by these levees, and any question as to whether we should operate the reservoir at a lower level should be looked at in this way: Only 18,000 acres of land represents the difference between 1,840-foot operation and, 1,850-foot operation. And 18,000 acres of land properly paid for does not offset a loss of over $1.5 million a year in actual revenue from this project; nor does it offset the loss of 3½ million acre-feet of storage to provide water for the use of the whole valley.

Mr. DAVIS. I have here a clipping from a Jamestown, N. Dak., newspaper of January 15 of this year which purports to report on a meeting at Williston, at which you and Governor Brunsdale are recorded as being present. You mentioned Governor Brunsdale's position on this a little earlier. I will read you the two paragraphs and then ask you for your personal opinion as one who was present. This reads:

> Governor Brunsdale told the group that, in his opinion, the area will not be bothered by an 1,850-foot operational level for years to come; but if the development of the pool is held to 1,840 feet little power would be produced. He said he would like to see the 1,840-foot operational level with an allowance for the reception of floodwaters in the reservoir enacted into law.

General POTTER. I, of course, cannot speak for the Governor. I was with him day before yesterday and he has not changed the stand that he expressed to the people here last year. What I think he was talking about—let me put it this way; what I told the people up there at Williston was this, that actually the top of the multiple-purpose pool is 1,838 feet and the space between 1,838 and 1,850 is used for the trapping of floodwaters. It is a flood pool, but we propose to use that water rather than discharge it as one normally does from a flood-control dam. And it is that utilization or maintenance of that pool with a gradual drawdown as it is used that they seem to object to.

If you will notice on that chart those little peaks, they go up each year but they come down nearly as rapidly. There is no intention to hold a level at 1,850 feet. Our intention is to hold a level at 1,838 feet and to use our opportunities as given to us by nature to use that water that comes in above that particular level.

Mr. DAVIS. According to this newspaper report, a Mr. Davidson, who is identified here as one of the leaders of the local area in the fight for 1,838-foot level, is stating that a system of pumps to protect irrigation projects would cost $12 million to build. Is that substantially correct?

General POTTER. No, sir. The system of levees and pumps, the entire installation proposed, costs $12 million.

Mr. DAVIS. How much of that will be for pumps?

General POTTER. I can break that out and furnish it for the record.

(The information referred to follows:)

The estimated contract cost of relief wells and pumps in the Lewis and Clark unit is about $1,350,000. The estimated contract cost of relief wells and pumps in the Buford-Trenton unit is about $1,250,000.

Mr. DAVIS. He further states it will cost $65,000 a year to operate. Is that substantially correct?

Mr. JOHNSON. It is estimated that the pumping of relief wells in the Lewis and Clark and Buford-Trenton districts will each cost about $65,000 per year.

Mr. DAVIS. He states this would be $10 more an acre than the current cost of running the entire irrigation system.

General POTTER. I, of course, do not know the cost of operating that irrigation system now.

Mr. DAVIS. He further states that if the farmers east of Garrison decide they want irrigation, "We will let down our arms and accept the 1,850-foot level." What indications have we had, if any, as to the desires of the farmers of East Garrison in respect to irrigation?

General POTTER. The preliminary plan of the Bureau of Reclamation for irrigation from Garrison waters was presented to the interagency committee at a meeting in Fargo, in September last year. At that time there seemed to be no doubt that the area favored irrigation.

Mr. JOHNSON. We are told, Mr. Chairman, that the State of North Dakota has contributed over $500,000 to the Bureau of Reclamation to help them further their study of irrigation development in North Dakota.

Mr. DAVIS. You have indicated here and I believe you roughly agreed that this $12 million figure is the cost of protecting the land in these irrigation districts. How does that compare with the cost of the land within the irrigation districts?

General POTTER. Our estimate of the value of the land in the Lewis and Clark Irrigation District is about $1 million, and in the area of the East Bottoms, $600,000. As against those two figures, of course, we have the cost of the levee around the Lewis and Clark Irrigation District of roughly $3.5 million, and of the land in the East Bottoms area of $4,630,000.

I would not propose to this committee the protection of those lands if this were an isolated flood-protection program; but we are talking about an element of the Garrison project and the record is replete with statements that it is proposed to protect this town and these irrigation districts. If the people in those two irrigation districts would rather sell than be protected, that would then be my recommendation to this committee. But I do not feel that we can go against the statements that have been made in the past that it is the intention of the Congress that they shall be protected. It is so firmly ensconced in the record, that I believe it would take a directive to determine definitely whether the people would rather sell out than be protected.

Mr. DAVIS. There is the statement in this newspaper item to which I referred that a spokesman for the two irrigation projects said that it is their opinion there is no possibility that pumps would keep water from seeping through. They said if this situation arose most of the farmers in the area would favor selling out.

General POTTER. There is some sentiment among some of them for selling out; but there is just as strong sentiment on the part of others to stay and be protected. I believe it is determined by where the individual farm sits within the area. The problem, I think, has been rather well expressed in this letter from the Bureau of Reclamation signed by Mr. McClellan who must have had all of the documents

with respect to the stipulations that have been made with reference to protection, and he states this:

> It does not appear to me that the expenditure of $4,600,000 for the protection of 2,640 acres of the East Bottoms area of the Buford Trenton project can economically be justified for the apparent hazard introduced by the construction of Garrison Reservoir. The occasions when a normal flood of 250,000 second-feet are experienced on top of a full flood-control pool must be exceedingly rare and the increase in damage produced by a raise in the water surface of 3 or 4 feet above that resulting from similar flows if the Garrison Reservoir did not exist could hardly be so great as to warrant this large expenditure.

He then goes on and says as an alternative he thinks the practice we follow of purchase and lease of areas in a potential flood-control pool would be a far more economical and equitable solution of this problem.

I personally believe that the record being so full of what we consider promises to protect, the local people in the area should be given an opportunity to decide which solution they want.

Let me make this statement with respect to Lewis and Clark. If we do not build a Lewis and Clark levee, we will have to make changes in the elevation of the highway and do other work. That would be the alternative. And the cost of doing those other things, instead of protecting Lewis and Clark, while it would be a little less, would be in the comparable range. So we will not save too much by doing away with the protective works for Lewis and Clark, because we would have to add other costs for the protection of the highway and other things. But that does not pertain to Buford Trenton.

Mr. RABAUT. This is going to be a large body of water that is created.

General POTTER. Yes, sir.

Mr. RABAUT. Are you taking into consideration the storms in that area, and that this thing might take on a pretty rough condition and become a Lake Erie, so to speak?

General POTTER. Yes, sir. Our taking line is well above the maximum pool elevation.

This levee around Williston which I indicate would have a maximum height of 20 feet, also has 3 feet of freeboard and 5 feet for aggradation, so 8 of those feet are in effect freeboard.

Mr. DAVIS. This decision with respect to building the levee or buying them out in the Lewis and Clark area is really a separate proposition from the matter of the protection for the city of Williston?

General POTTER. Yes, sir, absolutely. The protection for the city of Williston should go ahead in any event because of backwater effects and the aggradation that might take place.

Mr. HAND. General, there are three general areas to be protected here, are there not?

General POTTER. Yes, sir.

Mr. HAND. The city of Williston and two agricultural areas to which you refer.

General POTTER. The two irrigated agricultural areas.

Mr. HAND. With respect to Williston, you propose, of course, that that protection go forward in any event?

General POTTER. Yes, sir.

Mr. HAND. You said, as I understood you, except for what you say are implied promises of the Government to protect these other areas, that it would be more economical to buy the land and let it be flooded, than it would to protect it. Is that correct?

General POTTER. To buy the land—and I do not think we should use the words "let it be flooded," because it is not going to be flooded very often.

Mr. HAND. Now the value of the lands involved other than the city of Williston and other than the railroad in both of those areas are about $1,600,000.

General POTTER. According to our best estimate.

Mr. HAND. The cost of protecting the area involved, other than the city of Williston, if I understand, is about $12 million. Is that correct, or does that include the city of Williston?

General POTTER. That includes the city of Williston.

Mr. HAND. How much does Williston cost to protect?

General POTTER. The cost of Williston is $4,320,000.

Mr. HAND. So roughly $8 million or somewhat less than $8 million would be involved in the protection of those irrigated agricultural areas?

General POTTER. $8,200,000.

Mr. HAND. The total value, according to your estimate, is $1,600,000.

General POTTER. Yes, sir.

Mr. HAND. Now whether you protected them or not, you still would have the same problem in reference to the relocation of the railroads, highways, or both?

General POTTER. If we did not protect them, we would have other problems that would cost in the neighborhood of $3 million.

Mr. HAND. So if we add $3 million to the value of the land the $1,600,000, that is $4,600,000 which would be a net saving if we did not protect the areas of about $3.5 million?

General POTTER. Yes, sir.

Mr. HAND. Therefore you have suggested the economy is clear, that we should buy the land or buy the rights on the land and save that $3.5 milion but for what you say are the implied promises of the Government to protect those areas. Is that correct?

General POTTER. Yes, sir. They are in writing, Mr. Hand; they are more than implied. They have been put in writing. And if I could, I would like to read from the Secretary of the Interior's letter:

This agreement is made with the understanding that the Corps of Engineers will fully protect the Bureau's Buford Trenton irrigation project, the State of North Dakota's Lewis and Clark irrigation project, and the city of Williston from any adverse effect due to the reservoir.

Mr. HAND. What agreement?

General POTTER. The agreement that an 1,850-foot level is a proper operating level.

Mr. HAND. That agreement is between whom?

General POTTER. By direction of Congress, between us and the Department of the Interior, and it has been formalized in the actions I previously described.

Mr. RILEY. Your conclusions are based on the estimates of the value of the land made by the Corps of Engineers. As a practical matter, the courts have been giving them a little higher return for the land, so the possibility is you would save approximately only $2 million, when you get down to the hard facts of the proposition, instead of the $3 million as estimated. I mean you have a contingent liability there, in my opinion, of around $1 million.

Mr. HAND. What the gentleman said was that the worst experience they had had with the courts would increase the value about 50 percent in the case we were talking about.

General POTTER. I think about that—42 to 50 percent.

Mr. CEDERBERG. Is there any possibility of taking this land we have been discussing through lease, rather than through fee simple?

General POTTER. The best way, if the people up there would approve of it, would be to buy it and then lease it back to them.

PROTECTIVE WORKS

Mr. CEDERBERG. There has been some discussion, as I understand it, if it were not for the fact we were considering the irrigation possibilities of this project, we could keep the pool below 1,850 feet comfortably, keep it down, say, to 1,838 or 1,840 feet, and then these other matters would not be a problem. Is that correct?

General POTTER. If there were no irrigation, there would be 2 million acre-feet more to use for power production and downstream regulation.

Mr. CEDERBERG. But we would still need the protective works around Williston?

General POTTER. I would recommend that.

Mr. CEDERBERG. The reason I bring that up is that I, of course, am not familiar with the need for irrigation out there, but it seems to me there has been tremendous production going on in that particular area, having flown over there this last year and seen the wheat fields which looked as though they were producing enormously. You mentioned a minute ago you were going to take some of the water and even take it out of the basin and go over as far as Fargo, N. Dak., on the Red River and I think somewhere else with the flood-control problem on that river where they get too much water.

General POTTER. If you will look at this period from here through here that was the years when I think North Dakota was lucky to keep any people, and Montana too. Those are years when there were no crops because of a shortage of water.

Mr. HAND. It was a dust bowl.

General POTTER. Yes.

Mr. CEDERBERG. Realizing that is not a normal situation, but something that does happen occasionally, even if the pool went down, say, to a level of 1,838 feet and you had pumping facilities, and so forth, could not you take the water out of there and salvage this situation as well as if you had 1,845 or 1,850 feet?

General POTTER. At an increased cost for pumping.

Mr. CEDERBERG. But if it only happens occasionally, the difference in cost required at that particular time, considering the overall cost in keeping it on a permanent basis, would probably compensate for it.

General POTTER. There was one other figure which I did not give, which I think is also quite startling. There will be five 80,000 kilowatt generators here. At the level of 1,850 feet, it takes 6,000 cubic feet a second to make one of those generators do its job. At 1,775 feet, the bottom of the power pool, it takes 12,000 cubic feet a second to make one of these generators do its job. In other words, the more head we have, the more power you can produce and the longer we can have water in those drought periods downstream.

We made a study by the Interagency Committee, called the Water Adequacy Study based on this pool operating the way I have described, and we showed we can just get by that drought and have some water for everything. If we do not have that 3.5 million acre-feet annually to use, we won't get by that drought. The system is designed for an 11-year drought.

Mr. CEDERBERG. I can appreciate that one of the most important things we have to consider, so far as the country is concerned, is a wise conservation of our water resources. Of course, I would never quibble about an extra few million dollars in considering a project which is costing $289 million, so evidently the matter before us is whether or not to provide protective works we are discussing, or try to buy the property itself and make the other necessary arrangements so that the protective works won't have to be built.

General POTTER. I think you have stated it very well. The Williston protective works are part of the project and are included in the $289 million.

In view of the commitments that are made, I would like to suggest, if within my province, that we do not consider this as a separate project. It should be well thought out before we decided not to do it.

Mr. CEDERBERG. The rather amazing thing to me was the fact there is this opposition out there within the basin itself.

General POTTER. No; there is this opposition in Williston, not in the State generally.

Mr. CEDERBERG. When you get out of Williston, that opposition is gone; is that correct?

General POTTER. Yes, sir.

Mr. CEDERBERG. Then the people of Williston ought to be aware of the fact they are a part of this great country and cannot be isolated unto themselves. If there is going to be a benefit for the entire basin, there are going to have to be some dislocations and some effects that in a small way might be detrimental to those people. It is just a question of whether they are big enough to realize that. Is that correct?

General POTTER. Mr. Cederberg, I am just an engineer.

Mr. CEDERBERG. I appreciate that.

MISSOURI RIVER, SIOUX CITY TO OMAHA

Date	Unobligated balance	Unexpended balance
June 30, 1953	24,633	24,633
Dec. 31, 1953	20,017	20,017
June 30, 1954 (estimated)	0	0

Statement of average annual benefits [1]

Navigation: Savings in transportation costs	$6,915,000
Erosion control: Protection against erosion of an area of 1,800,000 acres, creation of 188,000 acres of new land by contraction of the river into a single channel, enhancement of land values, and removal of threat of erosion to thickly populated urban areas and other high value installations	19,395,000
Total benefits	27,600,000
Average annual charges	16,500,000

No continuing contracts in force or proposed for fiscal years 1954 and 1955.

[1] For entire project Sioux City to the mouth.

Mr. DAVIS. The final project in the Missouri River Basin for discussion in the 1955 program is the Missouri River from Sioux City to Omaha, with a total estimated Federal cost of $96,638,100, and there have been appropriations to date, exclusive of any funds appropriated in the 1954 fiscal year, $31,818,100. We have before us a request for $2 million which is to bring the total funding of the project to 35 percent.

The first thing that catches my eye, General, is the fact that you have increased the cost in your estimate at a little over $10 million since last year.

General POTTER. Some of the work, Mr. Chairman, is due to the raise in price level, but largely it is due to the continuing loss of structures already in place and which last year were still capable of being used. From Sioux City to Omaha the price level amounts to $2,200,000, whereas the increase due to destroyed work amounts to $8 million, or a total of $10.2 million.

Mr. DAVIS. I believe you told us that something over $8 million of that represents the cost of replacing structures previously built that have been destroyed and no longer of any value; is that correct?

General POTTER. Yes, and during the last 3 years the figure amounts to $21 million.

Mr. DAVIS. You carry under this project, I notice, a benefit-cost ratio of 1.67 to 1. How much of that benefit are you attributing to navigation?

General POTTER. 26 percent to navigation—this is for the whole stretch from Sioux City to the mouth; 35 percent is municipal and industrial protection, and 39 percent is agricultural land protection.

Mr. DAVIS. Do you have any breakdown with respect to the stretch of the river above Omaha as to which any of the benefits are attributable to navigation?

General POTTER. I do not think that is broken out. I would say that the protection to improvements for that particular stretch, which might be a little less than the 35 percent, because the larger communities involved are Sioux City and the upper part of Omaha and the percentage attributable to agricultural lands would be increased. The percentage to navigation, I would suggest, is about the same.

Mr. JOHNSON. The reach between Omaha and Sioux City is the widest part of the valley. At one place it is 17 miles from bluff to bluff.

General POTTER. It is in the lower valley where it gets to around five.

Mr. DAVIS. I wish you would give us the benefit of your thinking on this whole problem on the river above Omaha. We have had formal discussion of it previously here in the committee and we have had numerous informal discussions in the course of the committee's inspection trip of the river. It gets down to 2 points: One of them is the best overall method of proceeding, and then within the entire project, the progress that the Corps of Engineers had made in breaking this up into practical segments for doing the work. In other words, the stretches that you may have under study and now established where you can do the job on what I think you refer to as the hardbank to hardbank, and you indicated you were going to look at the thing again. Can you give us the benefit of your thinking on that?

General POTTER. Yes, sir. I would like to first establish another aspect of the financial picture. The total cost of the work performed prior to the war, was $32 million. The replacement cost of that $32 million at the present day would be between $75 million and $80 million. The later approved project estimate includes the salvageable value for the work in place, there being some $27 million to $28 million.

Now as to the theory of the work on this river, I think in presenting to you this matter, we ought to look at the whole river. And in order to solve that problem I have established an investigation board headed by Colonel Hayes, district engineer at Omaha, and on that board are Mr. Roberts and Mr. Stephenson, from my own office, a competent member from the Kansas City district, and one from the Omaha district. Their directive is to go over the whole reach of the river from Omaha north and see what bends might be bettered or changed, to study the material that we are using on the work, and to come up with a recommendation as to the ways to go at the work when it is resumed, the size of contracts, how to regain as much of the work that is still valuable, and so on.

They have attacked the problem, and in general have suggested that there are 3 important first steps to be taken, 3 important areas, that we may look at, and they are No. 1, the very vital area at Sioux City, where the work protects very valuable municipal and industrial improvement including the stockyards.

I have brought with me a book of pictures of the various stretches of the river, and I call your attention to the fourth picture, showing the Sioux City waterfront.

This is a picture of an important industrial area, which stretches further downstream than is shown in the photograph. We have spent some little maintenance money on this area to make sure that the stockyard industry is not lost.

And we would propose that funds, if they were made available, should be put in this particular area to save a rather important industrial community in the center of a large agricultural area.

That work is shown on this chart, and that would amount to close to a million dollars.

Mr. DAVIS. What would be the minimum practical appropriation, initial appropriation?

General POTTER. For the Sioux City area?

Mr. DAVIS. Yes.

General POTTER. That work could be done in 1 year, easily, Mr. Davis, but I would suggest half of that money could be well expended. I am not making any suggested area in the order of priority, it being my understanding, Mr Chairman, that you had asked for an analysis of the whole section of the river rather than one particular section.

Mr. DAVIS. Yes.

General POTTER. Another section, and one upon which we do still spend a little maintenance money, is the section immediately north from Omaha. We maintain 15 miles of river north of Omaha to make sure that the waters are properly channeled going by Omaha. That is maintenance funds out of the annual appropriation. That 15-mile stretch is from here up through this area.

A continuation of that area, that stretch of the river, goes up to Blair Bridge, some 30 miles upstream. Blair Bridge, railroad and

highway bridge, and what you refer to as the hard bank. The railroad bridge has been threatened several times due to improper attack by the river. Mr. Chairman, my Board has worked out what I think a very good answer for the rehabilitation of that 30-mile reach from Omaha to Sioux City. The total cost of the reach immediately above Omaha would be in the neighborhood of $2.4 million, and the total cost of the reach extending from this Omaha protection up to Blair Bridge would cost about $10 million. Incidentally these total costs are planned on the basis of finishing the work in 3 years in each of these areas [indicating].

INITIAL APPROPRIATION

Mr. DAVIS. Will you give us the initial appropriation for that particular stretch?

General POTTER. Above Omaha, $950,000; and this further stretch, to Blair Bridge—I would not advise the committee to start with less than an initial appropriation of in the neighorbood of 2 to 3 million dollars.

Mr. DAVIS. Is the $2 million included in the $10 million you referred to?

General POTTER. No.

Mr. DAVIS. You said the initial appropriation suggested $3 million.

General POTTER. I could not suggest less than 2½ to 3 million dollars for this, because the committee will see the enormous amount of work to be done, and once you start work on this river the work should be continued; it should be done to assure that there will be something to start on next year.

Now the fourth strip, and one that has had increasing importance, and continuing importance, is the reach from Decatur Bend to a point 16 miles upstream.

This stretch of about 11 miles long, the stretch from hard bank just south of Decatur to hard bank, about 11 miles upstream. The total cost of the work would be about $11 million, and here again is a 3-year plan of construction.

I would like to call the committee's attention to the coloring on this map, which is in blue and yellow. The blue shows the channel last year, when I testified before the committee, and the yellow the changes that have been made in just 1 year.

You can see in this stretch immediately upstream below Decatur the river has pushed over at least 5,000 feet and changed radically the direction of the next bend upstream and on further up there have been continuous changes.

The one that concerns me more than any other one in this bend here, is the continuing progress downstream, through a very large area of rich agricultural land, and the one above Decatur Bridge, which looks like it might tend to make a very serious cutoff in that area which would leave the town some 1½ miles from the river.

Then of importance itself to the particular area is the bridge, of course, not yet in use and the pipelines that cross the river immediately downstream. In each one of those stretches, with the exception of, of course, at Sioux City, the work north of Omaha, both of which are relatively small, I could not in conscience suggest to the committee that they start these jobs unless they felt that in future

years we could complete them, because if we start them and do not complete them that work would then fall in the river just like the other has.

This particular bend, above Decatur, is no good unless the remainder of the work is completed, and all of that work is completed and able to stand there against future attacks of the river.

Mr. DAVIS. You consider those practical segments of work that can be done, and that can be held without substantial loss?

General POTTER. Yes; and each one has been selected primarily because of the great amount of agricultural land that is falling into the river every week.

Mr. DAVIS. You have omitted any comment on Miners Bend area some distance up the river, because you have discussed it separately?

General POTTER. Yes. That work is a flood-control project, but the works are entirely essential and are identically the same as the works below Sioux City.

Mr. DAVIS. I believe you testified that the stretch of the river north of Sioux City beyond that bend was about $10.5 million.

General POTTER. That was the total cost, of which $6 million is still to go.

Mr. DAVIS. I had been under the impression, General, that the more efficient method of handling this overall problem, engineeringwise, had been to begin an orderly program of recapture of the river, with stabilization banks in the Omaha area, and then progressively working north on the river. Would that approach to the problem, on that stretch on the river that you have looked at, as being subject to practical work immediately, and would that be inconsistent with the kind of approach that can be done in the Omaha area?

General POTTER. I think, in the first place, Mr. Chairman, the kind of approach that can be made and should be made would depend upon the amount and scale of appropriation. Let us take two examples: Suppose the committee appropriated an amount in the neighborhood of, say, $2 million. I could suggest, in that case, that the Sioux City problem be taken care of and what was left then be used for work north of Omaha. In this analysis I am not including consideration of the importance of the bridge. If you gave us an appropriation in the neighborhood of, say, $6 million, which logically could not be spent wholly in one area, I would suggest a start at Sioux City, second, a start north of Omaha, and third, a start in the Decatur Bend. I am not indicating any priorities. It is not wise to try to crowd too much money on one stretch of the river. It just cannot be done. The river must do much of the work itself. We start the training into the bend, and then it proceeds to eat out a lot of the dirt itself. We could dredge it, of course, but that would result in a greater expenditure of funds than would be justified.

So with an amount, say, of $6 million, I would put $1 million of the money in Sioux City; I would put $2 million above Omaha, and the remainder in this stretch [indicating].

I doubt that without an appropriation as indicated that this work can get ahead. It is impossible to do any work that would leave me with structures that can hold in this Decatur reach for less than $2 million. It must be carried up to this next bend near the boundary of Thurston and Burt Counties.

Mr. DAVIS. Just what do you propose to do with the recommendation of the Bureau of the Budget with respect to the use of the $2 million that would be carried out this year?

General POTTER. The budget includes a stipulation as to the area in which it should be used, and I would start, first, with the training work, about 1½ miles, to 2 miles above Decatur, and start pushing the river back in the approach to the bend, and similar work would be done in the immediate concave bend upstream, and a start would be made on a small pilot canal under the bridge.

To complete this 1 series of bends, 1 complete bend, and 2 half bends would take in the neighborhood of 2 working seasons.

Mr. RILEY. How much money would it take on the two, to complete that section of the project?

General POTTER. From this section, indicated on this map?

Mr. RILEY. Yes. I believe you stated that you did not recommend doing it unless we did it in segments.

General POTTER. This is a hard bank right here, on one side only. As you perhaps know, this one structure is all that keeps the Missouri from breaking through here now. But this stretch, right down here, near the pipeline, up to the boundary between Thurston and Burt Counties, represents about $3 million worth of work.

Mr. RILEY. I understood you to say that the economic and practical approach would be to proceed over a two working season period.

General POTTER. Yes.

Mr. RILEY. In other words, that you should have about $2 million a year?

General POTTER. Well as I visualize this it would take about 3 contracts, in this stretch: 1 for the canal, 1 for the upper part of this work, and another for another part of the work. $2 million would enable us to advertise all three of them, but to carry the work to completion on this contract the funds would have to come from next year's appropriation.

Mr. RILEY. In other words, from an engineering standpoint, you think for the first year you should have $2 million, and the second year $1 million; is that about it?

General POTTER. Oh, no. If we are just to build the first bend up here, I would recommend against it. To start on this Decatur reach we should be assured of the $11 million to keep the whole 16-mile stretch.

Mr. RILEY. You have given the information that I wanted, that is, that you want to complete the whole stretch.

General POTTER. Yes; $11 million.

Mr. RILEY. How would be the most practical way of spending it; over how many years; half one year and half another year?

General POTTER. No; $2 million the first year; $3 million the next, and $6 million the last year.

Mr. RILEY. That would make a total of 3 years.

General POTTER. Yes; that is for the whole 16 miles.

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BENEFIT-TO-COST RATIO

Mr. HAND. General, you may have answered this question before, but have you calculated the benefit-cost ratio of this particular stretch of the river from Sioux City to Omaha?

General POTTER. No, sir.

Mr. HAND. The benefit-cost ratio of 1.67 to 1, includes the whole stretch from the mouth to Sioux City; is that correct?

General POTTER. Yes.

Mr. HAND. There are no separate benefit calculations here?

General POTTER. No.

Mr. HAND. For this stretch of the river is there any possible way you could justify it standing by itself?

General POTTER. I believe there is.

Mr. HAND. The cost-to-benefit ratio would be more strictly in the way of agriculture than industry.

General POTTER. Yes.

The navigation benefits are 26 percent. I doubt that would change.

Mr. HAND. I think last year you said in answer to a question from the committee that the navigation benefits alone could justify the project, looking toward the future increase in navigation. Is that still your opinion?

General POTTER. That is my personal conviction but of course only 26 percent of the total benefits are allocated against navigation in our studies.

Mr. HAND. Has there been any significant change in navigation carried on this stretch from your statement to the committee last year, General?

General POTTER. I do not know of a single cargo tow that went to Sioux City this last year. There may have been, but I do not remember hearing of any.

Mr. HAND. Last year you furnished for the record the statistics available with respect to traffic on the Misouri River from Omaha to Sioux City—I do not know; that was from Kansas City to Sioux City all the way?

General POTTER. Yes.

Mr. HAND. There was then and there is not now any significant commercial traffic on this section of the river?

General POTTER. No.

Mr. JOHNSON. It would be far to hazardous, Mr. Hand, in its present condition.

Mr. HAND. In its present condition it just is not navigable?

General POTTER. At 6 feet.

Mr. HAND. That is not sufficient depth?

General POTTER. No, not with the kind of equipment that they operate, which is quite remunerative from Omaha down.

Mr. HAND. Last year you very frankly stated that unless the appropriation currently required, which I think was then $2.2 million, could be followed by other appropriations which total about $9 million, you thought it would be senseless to spend the $2.5 million?

General POTTER. That statement still stands.

Mr. HAND. Only this year the request for appropriation is some $2 million, and your statement now is, I think you said we would have to contemplate the expenditure of some $11 million.

General POTTER. Yes.

Mr. HAND. To make that worthwhile.

General POTTER. Yes, due to the fact other work has been destroyed.

Mr. HAND. I think you have stated, but you might summarize it again briefly, in just what areas, and for just what purpose you expect to spend the $2 million now asked for?

General POTTER. That would spend in the bend and a half immediately upstream from the town of Decatur; it would lead the river under the bridge, and to the hardbank on the near boundary of Thurston and Burt Counties.

Mr. HAND. So again you suggest that the first phase of this problem is the study that takes place at Decatur, so that the river can be led under the bridge?

General POTTER. It was my understanding, in responding to the question of the chairman, that he desired me to attack the whole problem over all the reaches of the river, and the subject I am defending is this particular area.

Mr. DAVIS. I believe the record will show that General Potter testified, as he indicated, at the insistence of the chairman.

Mr. HAND. The estimated cost of the entire project is now $96,638,000.

General POTTER. Yes.

Mr. HAND. Would there be usefulness in the expenditure of the proposed $11 million on this phase we are now discussing unless there was the continuation of the total estimate of this $96 million, or whatever figure that would change to by increases and decreases in cost?

General POTTER. I think you should consider that this was an initial start, Mr. Hand, and while this particular stretch would have great value for protection of agricultural land is concerned, and for the Decatur Bridge and others, it could not be from this particular area a navigation system, until there had been connections to complete the work north of Omaha, past Blair Bridge and further north.

NAVIGATION BENEFITS

Mr. HAND. The completion of the remainder of the river after this present phase were completed would have considerable flood benefit, or would that be confined largely to navigational benefits?

General POTTER. Navigation and bank erosion.

Mr. HAND. There is no way of estimating really the navigation that might be developed here except on the basis of navigation from the lower part of the river; there is no navigation of any consequence?

General POTTER. No, but there have been tows up to Sioux City in the past that took a chance and went up there, and as you know, Sioux City is an important trade center for a very large agricultural area. I might also add that just recently there has been organized and is in the process of getting set up, a barge and boat-building firm in Sioux City.

Mr. HAND. Your testimony with reference to—was it the Parker firm from Texas?

General POTTER. Yes.

Mr. HAND. Which has been previously given to other sections on this river is applicable to this strip?

General POTTER. Yes. In fact, the boat was named the *Sioux City*.

Mr. HAND. Last year in your testimony, General, you said in response to a question from the chairman:

> I must admit to the committee that there are innumerable stretches where we could start to put parts of this river back in condition. In selecting this particular area, it was particularly favored over other areas because of the existence of the bridge which will serve to continue the development of those rich farming areas and the ability of the farmers to get their trade centers.

It is still your suggestion that that be the phase you would first attack?

General POTTER. Yes; there are two pipelines, which cross the river, the Socony Vacuum and the Great Lakes pipelines, that cross the river just below this point.

LOSSES FROM OMAHA TO SIOUX CITY

Mr. CEDERBERG. General, you mentioned that there have been losses of approximately $21 million of the works which have been put on this river. Did I understand you to correctly say that those losses took place from Omaha to Sioux City?

General POTTER. Yes; and in the last 3 years.

Mr. CEDERBERG. In the last 3 years there have been losses of $21 million?

General POTTER. Those are the replacement costs, not the initial costs.

Mr. CEDERBERG. Could that have been prevented; what could have been done to have prevented those losses?

General POTTER. If there had been sufficient maintenance funds to allocate to the upper stretches of the river, with enough to enable us to do the maintenance work.

Mr. CEDERBERG. Having looked at this river last September, it appears to me that the decision is far greater than the matter of $2 million before us right now.

General POTTER. It is.

Mr. CEDERBERG. It is a question of whether or not we are going ahead with the whole thing, or whether we are going ahead with it on a piecemeal basis. I think we ought to approach it from that point of view.

General POTTER. I will strongly recommend to the committee that it entertain no thought of going ahead on this on a piecemeal basis. We have had sufficient experience in the years past, in the early 1900's, where appropriations were used on a piecemeal basis, and there are very few if any of those works that are still of any use.

Mr. CEDERBERG. I assume you have brought that to the attention of the Bureau of the Budget?

General POTTER. I believe that General Chorpening did present a budget to the Bureau of the Budget.

Mr. CEDERBERG. From the request that is before us now it would appear that the Bureau of the Budget is content to go along on a piecemeal basis.

General POTTER. I believe that the Bureau of the Budget has accepted the thought that this river must be improved. I cannot speak for them, of course. But I am sure that they know the problem, because General Chorpening and I have discussed it many times, and

we see eye to eye as to the necessity of adopting the principle rather than making isolated appropriations. In some respects this bank erosion is going to be a more serious matter when we get a constant summer steady flow. Before we had the reservoirs the river would fall to a flow of about 10,000 cubic feet per second, in the summertime. We are going to keep it at about 35,000 second-feet and with the greater mass of water, with the greater potential, it will hit the existing banks. So this stretch is being consequentially damaged, I would say, by the steady flow of water, which is necessary for the existence of the valley. Of course, the damages which have occurred during flood period will be greatly reduced by the reservoirs.

Mr. RILEY. General, did I understand you to testify on this stretch from Omaha to Sioux City that work in place had been destroyed in the last 3 years to the amount of $21 million?

General POTTER. Yes, sir; replacement value.

Mr. HAND. Are there any unobligated funds currently available in this project that you expect to add to the $2 million requested?

General POTTER. No, sir. Any unobligated balance, which will be zero for the large stretch from the mouth to Sioux City, will be used in the stretches for which you appropriated last year. The unobligated balance at the present time is only $24,000 above Omaha, and that is the maintenance operation I told you about.

Mr. RILEY. This stretch which you recommend controlling and stabilizing is approximately 16 miles.

General POTTER. Yes, sir.

Mr. RILEY. You say that should be done in 2 working seasons, 1 of which would be in each spring?

General POTTER. No. I mixed up your first two questions. The two working seasons pertain to the stretch having to do with the bridge itself, that first 5 miles upstream from the bridge; but for the total 16-mile stretch it would be 3 fiscal years, which would embrace 4 working seasons.

Mr. RILEY. You could protect the work over the 3 working seasons?

General POTTER. Yes, sir, that could be held. We could do that stretch in 3 fiscal years, which would be 4 working seasons.

Mr. RILEY. In your opinion that would withstand the 35,000 feet a second that you contemplate will come down the river after you get your dams in place and the water is regulated?

General POTTER. It will be designed on that basis; yes, sir. That is part of the job of this Board, to discover if there are any conditions or structures we will need to take care of that kind of steady flow, and also to design the improvement on the most economical basis.

Mr. RILEY. You would attempt to move the river back into the indicated channel regardless of whether the bridge was there or not?

General POTTER. Yes, sir.

NIAGARA REMEDIAL WORKS

Amounts available for obligation

	1953 actual	1954 estimate	1955 estimate
Appropriation or estimate		$1,500,000	$2,000,000
Reimbursements from non-Federal sources		337,500	337,500
Obligations incurred		1,837,500	2,337,500

NOTE.—Reimbursements from non-Federal sources are received from private individuals, commercial concerns, nonappropriated funds, and States and municipalities (33 U. S. C. 558, 559, 571, 701, and 701k).

Obligations by activities

Description	1953 actual	1954 estimate	1955 estimate
DIRECT OBLIGATIONS			
Niagara remedial works		$1,500,000	$2,000,000
OBLIGATIONS PAYABLE OUT OF REIMBURSEMENTS FROM NON-FEDERAL SOURCES			
Niagara remedial works		337,500	337,500
Obligations incurred		1,837,500	2,337,500

Mr. DAVIS. The first item for discussion this morning is the request before us for $2 million for Niagara remedial works. The total estimated cost of the project is $17,536,000, of which the United States, by agreement with Canada, is committed to pay one-half or $8,768,000. The appropriations thus far in meeting our commitment have totaled $1.5 million, which amount was included in the final appropriation bill for the current fiscal year, 1954, and if the $2 million before us is granted there would still be required $5,268,000 in order to fulfill our commitment. I will insert into the record pages 780 and 781 of the justifications.

(The matter referred to follows:)

Summarized financial data

	Amount	Accumulated total percentage of estimated Federal costs
Total estimated Federal cost	[1] $8,768,000	
Total appropriations to June 30, 1953	0	
Appropriations for fiscal year 1954	1,500,000	
Total appropriations to date	1,500,000	17
Appropriation requested for fiscal year 1955	2,000,000	40
Balance to complete after fiscal year 1955	5,268,000	

[1] Combined estimated cost to United States and Canada, $17,536,000.

JUSTIFICATION OF ESTIMATE

Authorization

Treaty of February 27, 1950, between the Governments of Canada and the United States. Construction of works in accordance with report of International Joint Commission dated May 12, 1953.

Location and description

(*a*) Work to be done by the United States: Construction of the flank excavation in the Horseshoe Falls Cascades adjacent to Goat Island, including the necessary cofferdams. A 300-foot crest fill adjacent to Goat Island, with a concrete retaining wall surrounding the fill.

(*b*) Work to be done by Canada: Construction of the complete Chippawa-Grass Island Pool control structure, including all necessary cofferdams. Control structure will extend out from the Canadian shore some 1,550 feet into the river and will be located approximately 250 feet downstream of present submerged weir. The structure will consist of piers and 13 movable control gates. Excavation of the flank of the Horseshoe Falls Cascades adjacent to the Canadian shore, including the necessary cofferdams. Construction of a 100-foot crest fill on the Canadian end of the Horseshoe Falls crest with a concrete retaining wall enclosing the fill.

Scheduled completion date

(*a*) Work done by the United States: Flank excavation and fill will be completed during June 1955.

(*b*) Work done by Canada: Construction of the control structure will be completed during June 1957; flank excavation and crest fill will be completed during June 1956.

Status.—No construction work has been done. Preparation of plans and specifications for the work was initiated during August 1953. Flank excavation in the Horseshoe Falls Cascades adjacent to Goat Island (United States task) will be initiated during February 1954. Construction of the control structure (Canadian task) was initiated during September 1953.

Justification.—Construction of the remedial works in Niagara River consisting of the control structure and the excavation and crest fill on both flanks of the Horseshoe Falls will improve the distribution of flow along the crest of the Horseshoe Falls and control the levels of the Chippawa-Grass Island pool. These works will fulfill the objectives envisaged in the treaty of 1950 respecting the use of the waters of the Niagara River and will provide the remedial works necessary to preserve and enhance the beauty of the falls.

PROGRESS OF PROJECT

Mr. DAVIS. I will ask you first to tell us what progress has been made on this project which was essentially new to the committee, at least this particular work, last year.

General CHORPENING. As of this time, no construction work has been done on the United States side. The preparation of plans and specifications was initiated in August and we hope to initiate excavation on the United States flank of the Horseshoe Falls adjacent to Goat Island next month. The control structure, which is the large structure and is a Canadian job, since it is on their side, was initiated last September.

Mr. DAVIS. What does the present schedule of work at this site contemplate?

Mr. BEARD. Talking first of the work that will be done on the United States side, it contemplates opening, late this month, the bids that were advertised in January, with the construction actually to start on the cofferdam by the end of March, or as soon as weather conditions will permit. The work will proceed through the rest of 1954 and be complete by June of 1955.

As to the work that is being done by Canada, it is contemplated that the first and second-stage cofferdams for the control structure will be undertaken during the 1954 construction season and that the

installation of the gates will also start this year. The rest of the control structure will follow successively over the next 2½ to 3 years. The excavation of the Canadian flank of the Horseshoe Falls will be started very shortly after the completion of the excavation on our side.

The whole job is set up to be finished within 4 years as required by the treaty.

Mr. DAVIS. Am I correct in interpreting the justifications to the effect that the United States is paying for all of the work being done by the United States, plus a portion of the cost of the work actually being done by Canada?

Mr. BEARD. The way that is set up is that both countries are sharing half and half in the work that is being done by each country. In other words, as our work progresses the Canadians will reimburse 50 percent of that; as their work progresses, we will reimburse 50 percent of their costs. It is contemplated that there will actually be a transfer of checks, rather than a bookkeeping operation, for one thing, to take care of the difference in the exchange rate of the money. That seems to be one of the simplest ways to handle it. But the net result is that both countries are going to put the same amount of money into the project at all times.

Mr. DAVIS. What are we going to have when we get all done, as far as both countries are concerned? What is our objective here?

Mr. BEARD. The objective is to make more water available for hydroelectric power development at Niagara Falls without impairing the scenic beauty of the falls and the cascades. The treaty starts off by saying it is the purpose of the two Governments to preserve and enhance the scenic beauty of Niagara Falls—I am not quoting it exactly—and at the same time to make the full power potential available for use.

To accomplish that, it is necessary that the big flow which comes down through the center part of the Horseshoe under normal conditions be distributed more broadly across the crest of the falls during times of large diversions for power, and also that the distribution of the flow across the channel be under control in order that we do not find during certain low-flow conditions, that the water is concentrated in the central part of the Horseshoe, thus making a narrow flow. It is necessary, and the objective of the proposition is, to keep the falls spread throughout the entire crest in order to maintain it as an unimpaired scenic spectacle.

One of the primary requirements to accomplish the enhancement and preservation of the falls, also in order to make power available, is that the pool level of the Grass Island Pool be kept about at the natural elevation as it now exists. Because of the hydraulics of the channel itself it is necsssary to have this control structure with gates so that as the flows are diverted for power the gates can be closed; then during the other part of the day when power diversion is reduced, the gates are opened. This makes it possible to control the flow very closely without changing the levels in the Grass Island Pool.

General CHORPENING. As you will recall, the engineering work on this was done under the International Joint Commission and at one time I was a member of that Engineering Board working with the Canadians. Models were made to study this. It was exactly the type of thing that only by means of models could you really determine what was required, and the plan we are now proceeding on was

approved by the International Joint Commission after full knowledge of all the interested people.

Mr. BEARD. It might be of interest to the committee also to know that the Canadians are proceeding very rapidly with their power development. Their schedule calls for power actually to be in production by the end of this year. On the United States side, nothing yet has been done towards developing the additional power potential.

As you know, there has been legislation passed by the House, but still awaiting action in the Senate, that would make it possible to license a group of power companies in that area as a joint enterprise to develop this power head.

Mr. DAVIS. The eventual distribution of water for power purposes is to be 50–50, is it?

Mr. BEARD. Yes, sir.

Mr. DAVIS. But until such time as we do resolve the question as to how power is to be developed on our side, the Canadians will have full use of it?

Mr. BEARD. That is right. The treaty provides that if one country is not using its full share, the other country may use it.

Mr. HAND. How much planning money will we have spent by the end of the current fiscal year?

Mr. BEARD. The planning money that we will spend this fiscal year on this remedial works item is around $35,000. Or are you talking about the money that was appropriated for our studies of the power development?

Mr. HAND. I am talking about both. The $35,000 is all for remedial works?

Mr. BEARD. Yes, sir; on the actual remedial works, subsequent to the appropriation last year for starting construction.

Prior to that time we were given, I think, a total of around one-half million dollars for planning.

Mr. HAND. You had some through the State Department did you not?

Mr. BEARD. Yes; we had an appropriation of about $130,000 through the State Department; we also had a much larger appropriation through this committee. I think the total is around half a million dollars. I will have to supply it.

Mr. HAND. If you will.

(The matter referred to follows:)

Direct appropriations to the Corps of Engineers for Niagara redevelopment and remedial works investigation, $550,000.

Mr. HAND. You recall the committee asked you last year if Congress eventually authorized power development by private companies or by a State rather than by direct Government construction, whether we would be reimbursed for our planning money and I think your answer was we would be.

Mr. BEARD. The situation is that under the legislation which has been passed by the House, the Government would be reimbursed only if the legislation covered that.

Mr. HAND. You said, I think, in answer to our question that we would be reimbursed for the remedial works.

Mr. BEARD. That is right.

Mr. HAND. Then I asked you the question, which you then were not able to answer, would we be reimbursed for the planning funds. Is there any answer to that now?

Mr. BEARD. The Government would be reimbursed if the legislation that authorized the license so provided.

Mr. HAND. We would be, if we insisted on it?

Mr. BEARD. Yes; otherwise we will not be.

UTILIZATION OF POWER

Mr. HAND. To what extent is power now being utilized at this site and where?

Mr. BEARD. There has been for many years a power development on both the Canadian and American sides. On the American side, power is going to two places in particular; one into industries right below the bridge, which is a metallurgical industry, and the rest of the power is going directly into the system of the Niagara Mohawk Power Co.

Mr. HAND. That is on the American side?

Mr. BEARD. Yes, sir. Some power, a small amount, generated on the Canadian side is being exported back into the United States; but most of the Canadian power is going into the system of the Ontario Hydroelectric Power Commission for general use throughout that part of Canada.

Mr. RABAUT. There is quite a bit of that power that is going to come back to the United States?

Mr. BEARD. Not power which is generated on the Canadian side. The water will be divided half and half, so all of the power to be generated in the United States with our share of the water will be United States power.

Mr. RABAUT. We still have only our old plant there?

Mr. BEARD. That is right.

Mr. RABAUT. We have not made any arrangement for a new plant.

Mr. BEARD. No, sir.

Mr. RABAUT. But the Canadians are going ahead with their new plant?

Mr. BEARD. That is right. And all of the power in their new plant will be Canadian power for use in Canada.

General CHORPENING. In other words, we have a right to half of the water but are not moving to put in the plant.

Mr. RABAUT. You know we just tied up the Michigan Edison Co. with Canada.

Mr. BEARD. At Detroit and Windsor.

Mr. RABAUT. At Detroit and Windsor, and up above near Port Huron. There are two places tied in there and they are transmitting that power back and forth already. And up until the Canadian power is developed, I guess we are going to supply them with some power for peak loads.

Mr. BEARD. That is right.

Mr. RABAUT. But at night we hope to get the benefit of it, because we will be able to shut down some boilers and use our power from the falls. So that they are going to use considerable of that power.

Mr. BEARD. That interchange of power there at Detroit and also Port Huron is an advantageous situation to the power companies in

that area, and it may be through the interchange that some Niagara power will get into the United States, into Michigan. But it has no relation to the division of power at Niagara Falls under the treaty.

Mr. RABAUT. No.

Mr. BEARD. That is what I thought your question was about.

Mr. RABAUT. No. I meant we were going to use some of this power; that the power is going to find its way into the United States.

Mr. BEARD. That is right.

Mr. RABAUT. The cost of each other's work, I understand, is divided.

Mr. BEARD. That is right.

Mr. RABAUT. In other words, the work the United States does there, one-half of that cost is charged to Canada and all the work that Canada does there, half of that cost is charged to the United States. Is that right?

Mr. BEARD. That is right; yes, sir.

Mr. RABAUT. Then you have a differentiation in the money value that has to be adjusted, I suppose.

Mr. BEARD. The method for reimbursement that has been set up takes that into account. At the present time, Canadian money is at a premium of somewhere around 3 or 4 cents over our money. A few years back, it was just the reverse of that. But this method of reimbursement will take care of the adjustment.

GENERAL INVESTIGATIONS

SURVEY OF SAN FRANCISCO BAY AREA

Mr. DAVIS. We will next continue the discussion we had several days ago with respect to the survey in the San Francisco Bay area. At that time we were told an important conference was then in the offing and more definite information would be available following the conclusion of this conference. The committee is informed that Mr. Beard, who attended that conference, has returned and is prepared to furnish the committee with the additional information on it. We will be happy to have your report at this time, Mr. Beard.

Mr. BEARD. Mr. Chairman, at the time of our previous testimony, it was stated that a preliminary examination report of the division engineer was before the Rivers and Harbors Board and the Board shortly thereafter was going to act on it.

In connection with their consideration of the report, the Board made an all-day, in fact about a day and a half, inspection by automobile and airplane of the entire San Francisco Bay area and had meetings with local authorities of the bay cities and representatives of the State of California.

The State has under way an investigation of some of these matters relating to the San Francisco Bay region through the water projects authority of the State. There is also another study just starting by a transit commission that relates to that entire group of bay cities, in addition to the study we are involved in.

The Board worked out with the State the general outline of an agreement for coordination as between our work and the State's work. It was agreed that the matters that normally are of local concern, such as proposals relating to barrier dams, reclamation,

water supplies for domestic and industrial use, transportation other than navigation, and similar matters, will be primarily analyzed by the State; the survey work by the corps will analyze the need and desires of the bay area with regard to navigation, national defense, flood control and other matters of Federal interest, including and analysis of the State plans.

Both studies will be complementary to each other. Duplication of work will be avoided. It is the intent and desire of both agencies that the views of the State shall govern as to the matters of local concern.

In the discussion it was agreed that the opinions outlined here so briefly would be amplified by further agreements on detail points; but the gist of the whole thing is that we have worked out the way in which both the Federal interests and the local interests can be correlated by the agencies.

Following this meeting with the State, the Rivers and Harbors Board officially voted to recommend that a survey be made; but the exact scope of the survey and a few more of the details they wanted to hold open for further consideration at their next meeting, which will be held in late February. But for the purpose of advising you as to the action of the Board, they have definitely determined and recommended that the survey proceed.

The amount in the budget of $50,000 was in anticipation of such action and, if appropriated, would be used for the initiation of this survey work.

SCOPE OF THE SURVEY

Mr. DAVIS. We are still a little in the dark, then, as to the scope of the survey and the probable ultimate cost; are we not?

Mr. BEARD. Yes, sir, a little bit. The estimate that was in the preliminary examination report was for a survey that would cost ultimately $2,900,000. The money that the State water project authority now has available is about $400,000. Certainly the total cost of $2,900,000 could be reduced by that amount, making the total $2,500,000. Whether or not our survey can be reduced below that and still accomplish the needed purpose, we are not fully prepared to say. I think it is absolutely sure, however, that whatever is undertaken will be of great magnitude and the small appropriation that is in the budget is really only a fair start.

What I am trying to say is that the ultimate scope has very little to do with the use of this $50,000. It is important to you, of course, as to whether or not you will embark on something beyond what you really intend. After the Board meeting at the end of February, of course we can furnish you in complete detail what the Board is recommending.

I could go on and explain this a little more fully, if you wish. The Sacramento and San Joaquin Rivers flow into the northern arm of the San Francisco Bay, called Suisun Bay. The southern arm of the bay that extends down to Palo Alto has very little fresh water flowing into it. The tidal action through the Golden Gate is very considerable in both directions. Now the interrelation of all flows makes a very complicated hydraulic situation, and the proposition to put barrier dams across those channels makes a very considerable change in the hydraulic conditions.

A model study of large scope will be needed. The estimate of that has not been fully worked out, but a model to accomplish this work and the work of conducting experiments will cost somewhere in the neighborhood of $350,000 to $400,000, and perhaps more. In addition to that, there is the necessity for foundation explorations which are rather expensive, in addition to all of the engineering studies and the survey work and that sort of thing that is needed to clearly cover the area; and one that is as important and as heavily developed as the San Francisco Bay area.

The problem of fresh water in those bay communities is one of their most urgent problems, as you can well imagine.

Mr. HAND. What distinguishes all this from the local or regional problem?

Mr. BEARD. As we discussed when we were in San Francisco with the State people and outlined in this memorandum which I read to the committee, the survey does have very large factors of local significance and regional significance right there in the bay area. However, there are also very important matters of national interest; for instance, navigation in San Francisco Bay and the bay area is of very large national importance. San Francisco is our biggest port area on the west coast. In addition, San Francisco is the site of some of our most important national-defense establishments, both Army and Navy. Those must be thoroughly coordinated in any plan for regional development.

Besides those matters is the fact that San Francisco and the metropolitan area is one of our big centers of population in the West and that fact in itself makes it of extreme Federal and national significance far and away above and beyond the significance solely to the State of California.

Mr. DAVIS. We will hold this matter open, Mr. Beard, until you can give us a further report following the February meeting, so that we will have a better conception of the probable scope of the survey.

Mr. BEARD. All right, sir.

Mr. RILEY. If they do put that in, I think we ought to have an idea of the size of the locks that would be required, which is a matter of major interest.

VALUE OF ENGINEERING DESIGN INVESTIGATIONS

Mr. DAVIS. We have one other matter that has been somewhat held in suspension. That is the outgrowth of the previous discussions between Mr. Rabaut and General Chorpening with respect to a number of things which the corps has in mind with respect to the design and later economy, and things of that kind.

So I think we will ask you to open up that subject rather generally with your comments at this time, General Corpening.

General CHORPENING. Thank you, Mr. Chairman. I had contemplated at some time during these hearings giving the committee, briefly, some background of the work that the corps does in connection with keeping our engineering design current on our river and harbor, and flood-control projects, and it is in keeping with our desire always to fully advise this committee of what we are doing on various matters. And this is one we are particularly happy to bring to your attention, because we can report accomplishments on this phase of our activity

that not only represent important economies, but also a marked advancement in engineering principles.

About 7 or 8 years ago my predecessors realized that in having all of our design work done in the districts—as the committee understands, our districts design the projects that are assigned to them—we were encountering considerable duplication of effort. In other words, a project is assigned to a particular district. The district engineer and his staff would proceed to resolve matters that they needed to resolve in the design problem of their particular project, whereas over in some other district a similar activity was underway. And appreciating that, a procedure was established which we call our civil-works investigations to pull together that type of engineering design work and control it through my office here, so that we did not duplicate work and we could assign people to the work who were particularly qualified for those investigations.

A lot of the problems we face in the design of dams and river channels cannot be solved by any known mathematical formulas. The correct shape of the entrance to a hydraulic conduit, or the amount of cement we use in a particular aggregate in making concrete are examples of those problems, and we have to turn for a solution of those problems to the laboratories where we can use models or other testing facilities. Every time we design a new project, we meet a new set of physical conditions. No two dams are alike; no two streams are alike. It is a different setup.

Some of those conditions are similar to those we encountered previously and by keeping well-documented records of all of our model studies and laboratory tests, we can draw on that data for the design of new projects.

Furthermore, when we run several model studies on similar types of structures, we begin to develop a pattern and by filling in the gaps with a few selected studies we can arrive at an empirical formula and reduce or eliminate the need for a model, or a laboratory test.

The basic objectives of this program that we call the civil-works investigation are to obtain information for the design and construction methods not available or obtainable except by making selective model studies or laboratory tests; and, second, to analyze the records of all model studies and laboratory tests, to compile the data as usable design criteria, and to disseminate the results of studies and tests to all Corps of Engineers design installations.

Our investigations enter the various fields of engineering as dictated by the needs of our immediate construction, but more particularly our investigational work is in the fields of hydraulics, soils, mechanics and concrete materials which are those phases that do not lend themselves to exact determination as do many other phases of engineering.

I want to talk to you now just a little bit about how we handle this investigation procedure. Each year there flows into our Engineering Division from the field problems that have been encountered and recommendations as to studies we have been carrying on under this investigational program. That is very clearly screened by our people and comes to me for approval of those things that we are going to work on. I then give it my attention. This year, for instance, I spent 2 days down at our waterways experiment station, which is

the principal installation for carrying this out, going over in detail what work we are doing.

You appreciate that this investigational work is a part of the construction cost of the project. It is a part of the construction cost because the funds we spend go to improving design technique and construction methods. From the laboratory the results flow back to the districts and are a help to us in all the projects in the field. We constantly keep them informed. The average annual expenditure has been about $1,700,000 on this program which is roughly a half of 1 percent of our total annual construction funds.

I am going to ask Mr. Slichter in a few moments to give you some of the concrete results and savings that have been obtained through the use of this investigation program. At the same time, although we can brag a little about the savings, I want to point out to you that it is not always the savings in dollars and cents that is involved, but it is the assurance that we do not build structures that later prove to be inadequate and that require extensive modification or repairs.

Now, Mr. Slichter, if you will, give to the committee specifically some of the particular matters that we have followed in the civil-works investigations and the results obtained from them.

Mr. SLICHTER. Mr. Chairman, as General Chorpening pointed out, our district offices are responsible for project design and in this civil program, we have established a procedure whereby the information flows, you might say, constantly or intermittently as tests are completed to the field organizations. As a result of that, each type of test made produces certain design changes, the results of which are incorporated in current designs by the field offices. That is, every time a test is completed, it is adopted by the design organization. Some of those elements, therefore, are rather hard to tie back to the original analysis which produces the improvement in the design, but some of them, however, can be traced back, and I have listed several of them here, which I will give you.

One of the hydraulic studies carried out at our waterways experiment station is for general spillway design criteria and has to do with configuration, the size and the economics in arriving at sound structures for dam spillways.

We have spent, over a 5-year period, about $79,000 on those studies and we can take credit, direct credit, at the Garrison Dam where we reduced the number of crest gates in the preliminary design of the spillway from 30 to 28, and we narrowed down the spillway, the long chute, by 100 feet, and the total savings on that one job is about $1 million.

Similar studies and applications were made at the Center Hill Dam resulting in shortening the spillway by one bay and gate, at a savings of a half million dollars.

Another series of tests which we conducted was on the conduit intake model tests which we have carried on for some 5 years at a cost of $33,000. That test has to do with the shape of conduit entrances and the perfection of the hydraulic coefficient, to get less resistance from the water in entering the submerged tunnel.

Now, each time we design a large dam we figure that it has cut $10,000 from the construction cost, because the tests have been made.

Another item is the slide gate tests. We have, over the past 5 or 6 years, been increasing the head under which we can use the slide gates. First, we tested out a gate under 75-foot head, this being the maximum head under which we felt we could operate the slide gates. The slide gate is a simple type equipment and our investigations were toward developing it for use under high heads by which we could effect savings of millions of dollars in high head designs. Those tests have been completed at a cost of $133,000 and we are now designing gates for 200-foot heads. At Pine Flat Dam we reduced the required outlets needed from 15 to 10 with a saving of half a million dollars.

Another field is in connection with soil mechanics and relates to the work of facing the dam and protecting it against waves. We spent $50,000 on that study which involved a practical approach, that is, the study of all existing earth dams. We are now using the results on the slope-paving program on all our new dams.

General CHORPENING. That is not only the dams that we have built but studies of privately built dams of any kind.

Mr. SLICHTER. Yes. From those examinations and the analysis of the conditions existing which produce waves in the reservoir, we have come up with this study, and we estimate that we have actually saved $2.5 million in the last 10 years or shorter than that, in the application of our studies to the design of slope paving for earth dams, the net effect being a large reduction of the required rock riprap which is a costly construction item.

Another test conducted in the past 3 years has been the bore-hole camera. That is simply a gadget for dropping a camera down into a core hole for the purpose of taking a picture down in the hole. Experience in core drilling has proved that we never can recover all of the rock that is being bored. We have sometimes a very slight loss in rock but you never know when you are losing some important feature of the core. This camera is rigged up to take continuous pictures of the core and can be dropped down a hole 700 feet or more. We spent $25,000 in the development of that program, incidentally through a contract with a subsidiary of the Remington-Rand Co. We believe that if we had had that camera at the time we had drilled the Folsom Dam and it could have been used, we would have discovered the faults that were encountered during construction and could have saved ourselves $1 million on changes after the contract was started.

Another element in concrete is the use of air-entraining.

Mr. DAVIS. What was that?

Mr. SLICHTER. Air-entraining in concrete. These studies have shown that about 3 or 4 percent of air entrained in concrete will raise the quality and the durability, not only in freezing action but also it gives a surface of denser material. Furthermore, it increases the plasticity of the concrete and reduces the construction costs where it is used. Now, since the development of these tests, we have placed some 25 million cubic yards of concrete resulting in a saving of some $5 million on the basis of these investigations.

General CHORPENING. Mr. Slichter has given you about a half a dozen specific cases. This result is keeping us well up to date in the

forefront of engineering throughout the country and even worldwide.

We could go on and give the committee quite a number of others but I thought that would give you some typical examples of what we have been doing.

We feel we are on top of what is expected of any engineering organization in the world in the way of new development, and our people belong to the leading engineering societies of this country and of the world, our officers and our civilians, and many of the things that we have been doing are really pioneering almost in that field.

I do not want to go on too long, but I hope that what we have given will give you some idea of our activities in this regard and in the past, and if you wish any more information, it can probably better be brought out by answers to questions the Members might have.

However, before that, there is one other thing I might add which is separate from these matters.

Up until about 10 years ago, it was generally considered in building multiple-purpose projects or dams of any kind, that you had to clear, that is, clear the timber, all timber in the pool that you were going to cover with water. We had cleared it right down to the bottom. Obviously, in parts of this country, where there was heavy timber, that resulted in a tremendously heavy expense item. About 5 years ago we recognized the tremendous costs that we were facing, and believing that we could do something other than full clearing, a clearing committee was set up in the Office of the Assistant Chief of Engineer for Civil Works. That includes those people who have had a particular background and whose work has been in connection with that type of activity.

They looked into the practices being followed by other dam-building bodies, both public and private, looked very carefully into the health side of the picture, discussed the situation with the Fish and Wildlife Service, and as a consequence, we have modified our present policy getting away from the 100 percent clearance that we had previously done, which has resulted in reducing very decidedly the amount of clearing to be done.

We had thought by leaving the trees in there for some time, and covering them with water, they would die off and that would result in debris problems and it might seriously disturb the operation of the reservoir.

Now, we have concluded that that was more fanciful than real and it would not result in such damage; thus we could leave the timber standing.

As a consequence, we have now, as has been brought out, except with a few projects where we are still having discussions with the States and a few other agencies, made very good progress.

It is estimated that on the projects under way 2 years ago—I do not have the exact figure, but approximately 2 years ago—that this change in policy we are now following of reducing the clearing results in a saving of some $40 million on clearing alone. I think that is about enough on that.

Mr. RABAUT. Mr. Chairman, inasmuch as I asked that we have such information as has been supplied us this morning, and being a person who likes to treat others as I like to be treated myself, I want

to commend General Chorpening for the information that he has given the committee and the statement that he has made.

General CHORPENING. Thank you.

SALVAGE VALUE OF TIMBER

Mr. HAND. Will you comment on the salvage value of this timber if it were all cleared? Are you dealing with a lot of scrubby trees or bigger trees?

General CHORPENING. I am glad you raised that question, Mr. Hand, because as a part of our activities in this clearing committee, we have gone to considerable lengths to interest timber people to come in and enter into contracts to make the best utilization of the timber that otherwise would simply be lost, through burning or otherwise disposed of.

We have succeeded in quite a number of places where we thought that the timber would be of any value, where we found some merchantable timber, in securing lower costs in the bids.

Mr. HAND. I suppose that there must be quite a number of these clearing projects in which you find good timber?

General CHORPENING. That is correct.

Mr. HAND. You might find that it is better to log it than leaving it there and having it submerged.

General CHORPENING. Yes, sir; we do take that into consideration.

Mr. HAND. Where does the money go when such timber is sold?

General CHORPENING. It is handled in two ways: We may advertise for clearing, but we point out that there are merchantable timbers and that is to be taken into consideration in the bid price for the overall clearing so it results in a lower bid price. That is the usual practice.

Mr. HAND. I want to ask you one further question about the introduction of air in the concrete, and how that works out.

Mr. SLICHTER. That relates specifically to the construction and even within the southern areas where the climate is not so rigorous it does increase the plasticity of the concrete and gives a better structure, more uniform structure, and assists the contractor in his work.

Mr. HAND. You gave an estimated figure of some $5 million. For how long a period does that cover?

Mr. SLICHTER. That is for 25 million yards of concrete placed over the last 6 or 7 years.

Mr. HAND. That is very interesting. That will continue indefinitely?

Mr. SLICHTER. Yes.

Mr. HAND. In other words, every time you use 25 million yards of concrete, you save some $5 million?

Mr. SLICHTER. That is correct; it is actually a reduction in cost, as a result of the plasticity and the improved characteristics of the concrete you can reduce the cement by about a half a bag for each cubic yard.

Mr. CEDERBERG. General, with reference to the new policy in clearing reservoir sites, would that result in some assistance as far as the siltation problem is concerned, or is that negligible?

General CHORPENING. I think that would be negligible.

Mr. CEDERBERG. It would seem to me that if you had some of this timber in the reservoir, and it could be kept there, it would result in a more even distribution of the silt through the bottom of the reservoir, or might have some effect on the flow of the stream.

General CHORPENING. I get your point now. You mean if we left the trees in the reservoir.

Mr. CEDERBERG. Yes.

General CHORPENING. It might have some effect, but generally in our reservoirs, we find that pretty generally the silt settles out at the headwaters. The headwaters slow down the velocity which results in dropping the silt at the headwaters.

Mr. HAND. The value of the timber, of course, would be the significant thing, and I hope and I suppose you are paying attention to the commercial value where you have good timber which otherwise might be destroyed.

General CHORPENING. I can assure you that we are staying on that to insure that wherever possible, where we find merchantable timber, that the value is taken into consideration and that no good timber is being submerged which otherwise might have value when taken out.

Mr. DAVIS. General, I want to thank you for bringing this matter to our attention and I certainly feel that the Corps of Engineers is to be commended for its efforts in keeping abreast of the latest and most economical methods of construction, and I think the discussion has been very helpful to the members of the committee.

General CHORPENING. Thank you.

OPERATION AND MAINTENANCE, GENERAL

Amounts available for obligation

	1953 actual	1954 estimate	1955 estimate
Appropriation or estimate		$79,000,000	$67,200,000
Prior year balance available			12,000,000
Balance transferred, pursuant to Public Law 153, from—			
"Maintenance and improvement of existing river and harbor works"		3,517,100	
"Flood control, general"		995,179	
"Flood control, general, emergencies"		16,269,948	
Reimbursements from non-Federal sources		500,000	500,000
Reimbursements from other accounts		500,000	500,000
Total available for obligation		100,782,227	89,200,000
Balance available in subsequent year		−12,000,000	−7,000,000
Obligations incurred		88,782,227	82,200,000
Comparative transfer from—			
"Maintenance and improvement of existing river and harbor works"	$86,475,008		
"Flood control, general"	6,074,234		
"Flood control, general, emergencies"	29,746,428		
Comparative transfer to "General expenses, Corps of Engineers, civil"		−700,000	
Total obligations	122,295,670	88,082,227	82,200,000

NOTE.—Reimbursements from non-Federal sources are received from private individuals, commercial concerns, nonappropriated funds, and States and municipalities (33 U. S. C. 558, 559, 571, 701, and 701k).

Obligations by activities

Description	1953 actual	1954 estimate	1955 estimate
Direct Obligations			
1. Navigation:			
(a) Channels and harbors	$44,361,648	$44,851,604	$42,335,000
(b) Locks, dams, and canals	21,669,112	22,211,363	19,790,000
(c) Survey of northern and northwestern lakes	384,000	475,000	460,000
2. Flood control:			
(a) Reservoirs	2,667,546	3,509,456	3,200,000
(b) Other (including channel improvement projects, miscellaneous maintenance items and inspections)	735,993	909,704	75,000
3. Multiple-purpose projects, including power	5,751,333	8,950,822	9,300,000
4. Lower Columbia River fish sanctuary program	498,156	802,975	1,040,000
5. Emergency operations:			
(a) Removing sunken vessels and other obstructions to navigation	417,315	736,025	
(b) Protecting, clearing, straightening channels of navigable waters not specifically authorized by Congress (work under sec. 3, River and Harbor Act, Mar. 2, 1945)	113,413	230,973	
(c) Flood control emergencies—repair and flood fighting and rescue work	29,779,143	4,297,754	5,000,000
6. Allocated working fund obligations not identified with specific activities	29,286	106,551	
Total direct obligations	106,406,945	87,082,227	81,200,000
Obligations Payable Out of Reimbursements From Other Accounts			
1. Navigation:			
(a) Channels and harbors:			
(1) Corps of Engineers (military functions)	6,973,636	150,000	150,000
(2) Other Department of the Army military functions	471,506	75,000	75,000
(3) Department of the Air Force	4,482,743	150,000	150,000
(4) Department of the Interior	242,628	50,000	50,000
(5) Other Federal agencies	969,118	70,000	70,000
(6) Non-Federal agencies	2,689,446	350,000	350,000
(b) Locks, dams, and canals (non-Federal agencies)	46,120	50,000	50,000
2. Flood control:			
(a) Reservoirs:			
(1) Other Department of the Army military functions	8,028	5,000	5,000
(2) Non-Federal agencies	5,500	100,000	100,000
Total obligations payable out of reimbursements from other accounts	15,888,725	1,000,000	1,000,000
Total obligations	122,295,670	88,082,227	82,200,000

Obligations by objects

Object classification	1953 actual	1954 estimate	1955 estimate
CORPS OF ENGINEERS			
Summary of Personal Services			
Total number of permanent positions		4,338	4,024
Full-time equivalent of all other positions		297	275
Average number of all employees		4,473	4,145
Average salaries and grades:			
General schedule grades:			
Average salary		$4,694	$4,729
Average grade		GS-6.8	GS-6.8
Crafts, protective, and custodial grades:			
Average salary		$3,480	$3,510
Average grade		CPC-5.5	CPC-5.5
Ungraded positions: Average salary		$3,112	$3,112
Personal service obligations:			
Permanent positions		$17,122,651	$16,038,412
Other positions		862,000	800,000
Regular pay in excess of 52-week base		65,849	61,588
Payment above basic rates		1,721,000	1,600,000
Total personal service obligations		19,771,500	18,500,000

Obligations by objects—Continued

Object classification	1953 actual	1954 estimate	1955 estimate
CORPS OF ENGINEERS—continued			
Direct Obligations			
01 Personal services		$19,251,500	$17,980,000
02 Travel		445,000	400,000
03 Transportation of things		450,000	400,000
04 Communication services		90,000	90,000
05 Rents and utility services		250,000	250,000
07 Other contractual services		11,946,077	10,729,000
Services performed by other agencies		2,000,000	2,000,000
Services performed by "Revolving fund, Corps of Engineers"		45,197,265	42,730,600
08 Supplies and materials		5,983,724	5,000,000
09 Equipment		82,000	100,000
13 Refunds, awards, and indemnities		3,000	3,000
15 Taxes and assessments		54,000	47,000
Total direct obligations		85,752,566	79,729,000
Obligations Payable Out of Reimbursements From Other Accounts			
01 Personal services: Civilian		520,000	520,000
02 Travel		5,000	5,000
03 Transportation of things		2,400	2,400
04 Communication services		4,000	4,000
05 Rents and utility services		50,000	50,000
06 Printing and reproduction		1,000	1,000
07 Other contractual services		335,600	335,600
08 Supplies and materials		80,000	80,000
15 Taxes and assessments		2,000	2,000
Total obligations payable out of reimbursements from other accounts		1,000,000	1,000,000
Total obligations		86,752,566	80,729,000
ALLOCATION TO FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR			
Total number of permanent positions		34	32
Full-time equivalent of all other positions		4	2
Average number of all employees		36	33
Average salaries and grades:			
General schedule grades:			
Average salary		$4,578	$4,608
Average grade		GS–5.5	GS–5.5
01 Personal services:			
Permanent positions		$146,057	$139,580
Other positions		12,500	5,900
Regular pay in excess of 52-week base		540	520
Payment above basic rates		1,235	1,050
Total personal services		160,332	147,050
02 Travel		15,000	7,810
03 Transportation of things		12,500	7,700
04 Communication services		1,150	1,200
05 Rents and utility services		11,000	5,000
07 Other contractual services		450,910	766,200
08 Supplies and materials		159,013	111,970
Subtotal		809,905	1,046,930
Deduct charges for quarters and subsistence		6,930	6,930
Total obligations		802,975	1,040,000
ALLOCATION TO GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR			
Total number of permanent positions		76	65
Full-time equivalent of all other positions		16	13
Average number of all employees		85	75
Average salaries and grades:			
General schedule grades:			
Average salary		$4,578	$4,608
Average grade		GS–6.8	GS–6.8

Obligations by objects—Continued

Object classification	1953 actual	1954 estimate	1955 estimate
ALLOCATION TO GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR—continued			
01 Personal services:			
Permanent positions		$331,800	$282,200
Other positions		37,000	31,000
Regular pay in excess of 52-week base		1,200	1,100
Total personal services		370,000	314,300
02 Travel		25,000	20,000
03 Transportation of things		1,000	1,000
04 Communication services		2,000	2,000
05 Rents and utility services		3,000	3,000
06 Printing and reproduction		1,000	1,000
07 Other contractual services		30,000	20,000
08 Supplies and materials		59,186	49,200
09 Equipment		35,000	20,000
15 Taxes and assessments		500	500
Total obligations		526,686	431,000
SUMMARY			
Summary of Personal Services			
Total number of permanent positions		4,448	4,121
Full-time equivalent of all other positions		317	290
Average number of all employees		4,594	4,253
Average salaries and grades:			
General schedule grades:			
Average salary		$4,694	$4,729
Average grade		GS–6.8	GS–6.8
Crafts, protective, and custodial grades:			
Average salary		$3,480	$3,510
Average grade		CPC–5.5	CPC–5.5
Ungraded positions: Average salary		$3,112	$3,112
Personal service obligations:			
Permanent positions		$17,600,508	$16,460,192
Other positions		911,500	836,900
Regular pay in excess of 52-week base		67,589	63,208
Payment above basic rates		1,722,235	1,601,050
Total personal service obligations		20,301,832	18,961,350
Direct Obligations			
01 Personal services		19,781,832	18,441,350
02 Travel		485,000	427,810
03 Transportation of things		463,500	408,700
04 Communication services		93,150	93,200
05 Rents and utility services		264,000	258,000
06 Printing and reproduction		1,000	1,000
07 Other contractual services		12,426,987	11,515,200
Services performed by other agencies		2,000,000	2,000,000
Services performed by "Revolving fund, Corps of Engineers"		45,197,265	42,730,000
08 Supplies and materials		6,201,923	5,161,170
09 Equipment		117,000	120,000
13 Refunds, awards, and indemnities		3,000	3,000
15 Taxes and assessments		54,500	47,500
Subtotal		87,089,157	81,206,930
Deduct charges for quarters and subsistence		6,930	6,930
Total direct obligations		87,082,227	81,200,000
Obligations Payable Out of Reimbursements From Other Accounts			
01 Personal services: Civilian		520,000	520,000
02 Travel		5,000	5,000
03 Transportation of things		2,400	2,400
04 Communication services		4,000	4,000
05 Rents and utility services		50,000	50,000
06 Printing and reproduction		1,000	1,000
07 Other contractual services		335,600	335,600
08 Supplies and materials		80,000	80,000
15 Taxes and assessments		2,000	2,000
Total obligations payable out of reimbursements from other accounts		1,000,000	1,000,000
Total obligations		88,082,227	82,200,000

Analysis of expenditures

	1953 actual	1954 estimate	1955 estimate
Unliquidated obligations, start of year			$19,132,356
Obligations incurred during the year		$88,782,227	82,200,000
Obligations transferred, pursuant to Public Law 153, from—			
"Maintenance and improvement of existing river and harbor works"		6,848,226	
"Flood control, general"		342,535	
"Flood control, general, emergencies"		1,459,368	
		97,432,356	101,332,356
Deduct:			
Reimbursements		1,000,000	1,000,000
Unliquidated obligations, end of year		19,132,356	24,332,356
Total expenditures		77,300,000	76,000,000
Expenditures are distributed as follows:			
Out of current authorizations		62,000,000	60,000,000
Out of prior authorizations		15,300,000	16,000,000

Mr. DAVIS. We will turn now to "Operation and maintenance," for which we have before us a request of $76,200,000. We will insert page 706 of the justification in the record at this point.

(The statement referred to follows:)

1. Navigation:	
(*a*) Channels and harbors	$42,335,000
(*b*) Locks, dams, reservoirs, and canals	19,790,000
(*c*) Surveys of northern and northwestern lakes	460,000
Subtotal, navigation	62,585,000
2. Flood control:	
(*a*) Reservoirs	3,200,000
(*b*) Other (including channel-improvement projects, miscellaneous maintenance items and inspections)	75,000
Subtotal, flood control	3,275,000
3. Multiple-purpose projects including power	9,300,000
4. Lower Columbia River fisheries-development program (transfer to Fish and Wildlife Service)	1,040,000
5. Emergency operations:	
(*a*) Removing sunken vessels and other obstructions to navigation	
(*b*) Protecting, clearing, straightening channels of navigable waters not specifically authorized by Congress (work under sec. 3, River and Harbor Act, Mar. 2, 1945)	
(*c*) Flood-control emergencies, repair and flood fighting and rescue work	
Total, operation and maintenance, general	76,200,000

UNOBLIGATED AND UNEXPENDED BALANCES

Mr. DAVIS. Last year at page 552 of the hearings, there appeared a table showing the unobligated and unexpended balances, estimated at the latest date, and I will ask you to insert a similar table in the record at this point.

General CHORPENING. Yes.

(The information requested follows:)

Unobligated and unexpended balances, operation and maintenance, general

Appropriation feature	Unobligated balance as of Dec. 31, 1953	Estimated unobligated balance as of June 30, 1954	Unexpended balance as of Dec. 31, 1953	Estimated unexpended balance as of June 30, 1954
1. Navigation:				
(a) Channels and harbors	$23,525,245	$500,000	$28,973,977	$3,500,000
(b) Locks, dams, and canals	11,565,441	300,000	12,667,096	1,500,000
(c) Northern and northwestern lakes	220,666	----------	228,341	2,000
2. Flood control:				
(a) Reservoirs	1,875,081	90,000	1,998,257	110,000
(b) Other	557,789	----------	571,432	10,000
3. Multiple purpose	5,311,601	100,000	5,418,174	140,000
4. Lower Columbia River fish program	(1)	(1)	(1)	(1)
5. Emergency operation:				
(a) Sunken vessels	583,209	----------	614,261	20,000
(b) Sec. 3	168,918	40,000	168,918	50,000
(c) Emergency fund	15,004,878	12,000,000	15,314,715	13,800,000

[1] Appropriated funds transferred to Fish and Wildlife Service, Department of the Interior.

NUMBER OF PROJECTS BEING MAINTAINED

Mr. DAVIS. Last year on page 553 of the hearings, there was a table inserted showing the number of projects being maintained. I will ask you if you will supply a current table on that matter?

General CHORPENING. Yes.

(The table requested follows:)

Number of navigation projects being maintained

	1947	1948	1949	1950	1951	1952	1953 [1]	Proposed 1954 [1]	Proposed 1955 [1]
Channels and harbors	316	363	352	296	252	205	193	199	159
Locks, dams, and canals	38	38	38	40	42	41	29	29	29
Total	354	401	390	336	294	246	222	228	188

[1] Under the revised appropriation structure for fiscal year 1954, certain projects formerly under the category "Locks, dams, and canals" have been placed under the category "Channels and harbors" and vice versa. The numbers of projects shown for these fiscal years do not include projects on which condition surveys or custodial maintenance is the only work undertaken or proposed.

INTRACOASTAL WATERWAY AND MAINTENANCE COSTS

Also, bring up to date the table which appeared on page 554 of last year's hearing relative to the costs of the Intracoastal Waterway operation and maintenance.

(The table is as follows:)

Intracoastal Waterway operation and maintenance costs

Fiscal year	Atlantic Intracoastal Waterway (Norfolk, Va., to Miami, Fla.)	Gulf Intracoastal Waterway (St. Marks, Fla., to Brownsville, Tex.)	Fiscal year	Atlantic Intracoastal Waterway (Norfolk, Va., to Miami, Fla.)	Gulf Intracoastal Waterway (St. Marks, Fla., to Brownsville, Tex.)
1947	$1,127,835	$1,833,658	1952	$899,204	$3,199,528
1948	1,460,712	2,688,614	1953	822,821	3,742,202
1949	2,026,403	2,535,010	1954	[1] 1,197,700	[1] 3,838,800
1950	1,138,797	4,390,024	1955	[1] 953,600	[1] 2,867,500
1951	1,253,235	3,579,634			

[1] Estimated obligations.

GENERAL STATEMENT

Mr. DAVIS. General, I will ask you to give us an overall picture with respect to the use of the $76,200,000 for maintenance.

General CHORPENING. Mr. Chairman, I am going to ask Colonel Powers, whom you recall is now Chief of the Operations Division, to respond to that.

Mr. DAVIS. We will be glad to have you do so, Colonel.

Colonel POWERS. Mr. Chairman, the budget request for "Operation and maintenance, general," totals $76,200,000, which is $2,800,000 lesser in amount than was appropriated for this item in fiscal year 1954.

The appropriation provides funds for five main subclasses of operation and maintenance: Navigation projects, flood control projects, multipurpose projects, lower Columbia fisheries project and emergency operations.

We reduced by approximately one-third the amount requested for maintenance and operation in the fiscal year 1955 by the field offices of the Corps of Engineers to provide for only the most urgent requirements under the subclasses I have mentioned. The field office program was thoroughly reviewed and adjusted downward with each subclass allocated its equitable share of the total program.

It is possible to hold to this substantially reduced amount through the deferring of some of the dredging, breakwater repairs, and rehabilitation of lock and dam structures until the need for the work is more critical and requires immediate programing.

The program now before you presents the requirements of project maintenance after consideration of all funds currently available and requested. The maintenance program is, of course, a continuing program. It requires a continual review and adjustment. Although the proposed 1955 allocation by projects covers our presently anticipated requirements within established criteria, it is inevitable that adjustments will be made. These will arise because of storm effects on the structures and channels; because of accelerated deterioration of structures, due to physical conditions or changes which are not now apparent; because of variations from the normal expected deterioration in structures; because of unanticipated channel obstructions; and because of actual errors in judgment with regard to calculated risks we have assumed at this time.

These causes might operate to increase or decrease the proposed allocation of funds to any one project.

In addition to the foregoing work adjustments, there will, of necessity, be some fund adjustments in allocations because of savings made, and variations of costs or quantities from the present estimates.

LOCAL MAINTENANCE OF FLOOD-PROTECTION PROJECTS

Mr. DAVIS. In last year's hearing, there appears considerable discussion of this overall maintenance problem. As a result of that, the committee made some suggestions in its report last year, and you will recall the committee called attention of the Congress to the inconsistency of existing legislation with regard to the maintenance of local flood-control projects. Subsequently, the committee asked the Secretary of the Army to make necessary arrangements with local interests involved to relieve the Federal Government of the maintenance charges on flood-protection projects.

Can you tell us what has been done in conformance with that committee request?

General CHORPENING. Colonel Powers has some detailed information on that subject. Acting in conformance with and in response to the report of the committee, letters were sent to all of the local interests involved last October, advising them that, effective with the fiscal year 1955, there would be no funds in the 1955 budget. We have received replies from most of them and Colonel Powers will give you more details about that, but I want to say further that this budget now before you does not include any requests for funds for the maintenance of those projects, in conformance with what we understood to be the direction of this committee.

Colonel Powers, would you enlarge on that?

Colonel POWERS. Most of the flood-channel projects, which have been federally maintained to date, were authorized by the 1936, 1937, and 1938 Flood Control Acts. However, we have accomplished channel maintenance in five channel-improvement projects that were authorized in the Flood Control Act of 1941, as a result of the specific recommendations in the survey report documents, which reflected the maintenance policy on channels established in the 1938 act. Two projects were modified by later legislation with no changes with respect to maintenance responsibility of the Federal Government.

As General Chorpening has said, in order to carry out the intent of the committee, letters were dispatched to the local interests involved in the subject projects, including the five additional projects, and we have received replies, some of them tentative, through the division and district offices, from all concerned. We find that a great majority of the responsible agencies report they are financially, and in some cases legally, unable to take care of a maintenance committment. In two cases, both in Louisiana, local interests contend that these are not local flood-protection projects.

However, for the southern New York project, the New York State Flood Control Commission, has recently, within the week, written a letter indicating the probability that the State would assume the maintenance of the project, provided the Federal Government could or would not continue maintenance and provided the Federal Government will transfer their real-estate interest to the State without reimbursement being required.

The Los Angeles County Drainage District has indicated they would be willing to take over the responsibility of operating and maintaining the project provided the laws were changed making this procedure applicable nationwide.

All other agencies have indicated they were unable, or did not desire to take on the responsibility.

The actual estimated requirements for such operation and maintenance costs during the fiscal year 1955, are estimated to be $480,000 but as General Chorpening indicated, there is nothing for this purpose included in the budget estimate now before you.

MAINTENANCE OF LOCAL FLOOD-PROTECTION PROJECTS

Mr. DAVIS. Will you place in the record a list of the projects that you have mentioned, with a brief summary statement of the responses you received from them?

(The information requested follows:)

Maintenance of Local Flood-Control Projects

1. SOUTHERN NEW YORK PROJECTS

State has not officially replied, but has implied that they consider projects too important to leave unmaintained if Federal Government does not continue. State has asked if Federal Government would turn over its real-estate interests to maintaining agency. Authorized by Flood Control Act, June 22, 1936, in accordance with plans approved by Chief of Engineers. Public Law 738, 74th Congress.

2. YORK, PA.

Question is being considered at meeting of Pennsylvania Department of Forests and Waters on February 10, 1954. Authorized by Flood Control Act, June 22, 1936. Public Law 738, 74th Congress.

3. BAYOU PIERRE, LA.

The Red River, Bayou Pierre Levee and Drainage District of Louisiana state they are financially unable to assume maintenance. State of Louisiana replies that under the legislation, local interests should not be required to assume maintenance. Authorized by Flood Control Act, June 22, 1936. House Document 378, 74th Congress, 2d session. Public Law 738, 74th Congress.

4. BAYOU TECHE AND VERMILION RIVER, LA.

The Lafayette Harbor and Terminal District refers the problem to the State, which states it sees no reason for Federal Government to change its maintenance practice. The Arcadia-Vermilion Rice Irrigating Co., notes that this is too comprehensive a project to be classified as a local project, in the sense of the Appropriations Committee; ask that only Federal maintenance is practicable. Authorized by Flood Control Act, August 18, 1941. Public Law 228, 77th Congress.

5. BIG BLACK AND HOMOCHITTO RIVERS

The Homochitto Drainage and Development District and the 7 counties replying to our query (of 11 involved) all report they do not have financial means to assume maintenance. Both authorized by Flood Control Act, June 22, 1936. Public Law 738, 74th Congress.

6. MERMENTAU RIVER, LA.

The Mermentau Basin Association, the Calcasieu River Watershed Association, Inc. and the State all stress the general nature of the project and disclaim financial ability to assume maintenance. Authorized by Flood Control Act of August 18, 1941, and Rivers and Harbors Act, July 24, 1946, Public Law 525, 79th Congress and Public Law 525, 79th Congress.

7. JOHNSTOWN, PA.

City of Johnstown cannot assume maintenance because they are not financially able to, lack taxing authority, lack authority on basis of land being federally owned, and because project also serves other communities. Authorized by Flood Control Act June 22, 1936, and August 28, 1937, Public Law, 406 75th Congress.

8. ELKINS, W. VA.

City will perform certain routine clean-up operations, but will not assume maintenance responsibility. Authorized by Flood Control Act June 28, 1938, Public Law 761, 75th Congress.

9. MASSILLON, OHIO

Massillon Conservancy District is in process of turning over their responsibilities to city of Massillon. New administration of city will be asked to accept maintenance, but not expected to agree. General authority for Ohio River Basin in Flood Control Act, June 28, 1938 Public Law 761, 75th Congress.

10. NEWARK, OHIO

City, now in poor financial condition not willing to assume added responsibility. General authority for Ohio River Basin in Flood Control Act, approved June 28, 1938, Public Law 761, 75th Congress.

11. MIDDLESBORO, KY.

City is unable financially to assume maintenance. Authorized by Flood Control Act June 22, 1936, Public Law 738, 74th Congress.

12. PUNXSUTAWNEY, PA.

City of Punxsutawney not in financial condition to assume maintenance. Authorized by Flood Control Act June 28, 1938, Public Law 761, 75th Congress.

13. MOUNDS AND MOUND CITY

City of Mounds, Ill., agrees to accept maintenance of Cache River diversion levees. Authorized by Flood Control Act June 28, 1938, Public Law 761, 75th Congress.

14. MOUTH OF SANGAMON RIVER, ILL.

The State, counties, and drainage districts all state they have neither authority nor funds to assume maintenance. Authorized by Flood Control Act June 22, 1936, Public Law 738, 74th Congress.

15. SEBEWAING RIVER, MICH.

The city of Sebewaing states they are unable to assume maintenance. The Sebewaing River Drainage Board note their financial limitations, and have appealed to their Congressmen for continued Federal maintenance. Authorized by Flood Control Act August 18, 1941, Public Law 228, 77th Congress.

16. KENSLERS BEND, NEBR.

City of South Sioux City, Neb., reports they cannot assume financial responsibility. Replies from other cities and counties not received to date. Maintenance is not of type which these agencies could be expected to maintain successfully. Authorized by Flood Control Act August 18, 1941, Public Law 228, 77th Congress.

17. SALMON RIVER, ALASKA

The Territory of Alaska has no authority under law. The Bureau of Public Roads (Salmon River Highway is protected) lacks authority. The village of Hyder is not financially or legally able to undertake maintenance. Authorized by Flood Control Act June 18, 1934, Public Law 388, 73d Congress.

18. STILLAGUAMISH AND TACOMA, WASH.

Snohomish County and city of Tacoma state lack of funds and/or authority preclude assuming maintenance. Authorized by Flood Control Act June 22, 1936, Public Law 738, 74th Congress.

19. WILLAMETTE RIVER

Four reporting districts do not have taxing ability under Oregon law to secure funds for maintenance. Authorized by Flood Control Act June 28, 1938, Public Law 761, 75th Congress.

20. LOS ANGELES COUNTRY DRAINAGE AREA

Los Angeles County Flood Control District interposes no objection to accepting responsibility for the normal maintenance of channel improvements provided:

1. That Congress first amend existing flood-control legislation in such a manner as to uniformly require all responsible local agencies throughout the Nation to assume such maintenance.

2. Either certain corrective measures be completed prior to transfer, such as paving of the bottom of certain reaches of Los Angeles River, or the Government retain responsibility for future correction.

3. That the district does not waive the right of recovery of funds expended by the district as required under 1936 act for which it was or will be reimbursed under the terms of the 1938 amendment.

The Flood Control Acts of June 22, 1936, and May 15, 1937, authorize the construction of reservoirs and channel improvements in the Los Angeles and San Gabriel Rivers, Rio Hondo and Ballona Creek and tributaries thereof for protection of Los Angeles County.

The Flood Control Act approved August 18, 1941, adopted the general comprehensive plan for flood control and other purposes in the basins of the Los Angeles and San Gabriel Rivers, Rio Hondo and Ballona Creek as set forth in House Document No. 838, 76th Congress, 3d session. May 15, 1937, Public Law 86, 75th Congress; Aug. 18, 1941, Public Law 221, 77th Congress; June 22, 1936, Public Law 738, 74th Congress.

TRANSFER OF LAND

Mr. DAVIS. What would be involved in the taking of the land that was referred to in the answer received from the State of New York?

Colonel POWERS. I do not believe there is currently any provision that will permit us to make the transfer directly to the agency without additional legislation.

Mr. DAVIS. That is the direction to transfer?

Colonel POWERS. The direction to transfer, which would enable us to take action.

Mr. DAVIS. What kind of language would you suggest?

Colonel POWERS. It would include the land which has been furnished in fee or in easement, so far as the building of the project is concerned. We had to have property rights in order to build the project.

General CHORPENING. It would be a transfer of the property rights.

Mr. DAVIS. Would it not be a rather simple matter to transfer land to them and to include a provision that would pretty well assure maintenance by the grantee?

Colonel POWERS. I do not understand the question.

Mr. DAVIS. It would be very simple for the legislative committee to provide for that and at the same time, it would be quite a simple matter, in the course of the transfer, to have the document contain assurances with respect to the maintenance on the part of the grantee of the land, would it not?

General CHORPENING. It would be a simple matter as long as it was covered by legislation. It would simplify very greatly the disposal of the land. There are instances, I think, where legislation would be essential in this connection.

Mr. DAVIS. What would you require; a special law providing for the transfer in each case, or general legislation that would authorize you to go ahead wherever it is necessary?

General CHORPENING. I have not discussed this with our counsel, but I would think that general legislation would be the better approach rather than specific legislation.

Mr. DAVIS. We may assume that the Corps of Engineers will take the initiative in the request for such legislation to the legislative committees.

General CHORPENING. We propose to do that during the hearings this year; to propose legislation to take care of the situation as this committee has indicated it desires us to do. Otherwise, we are in a vacuum, where the local interests in most cases are saying they could, or they will not take care of the maintenance, and we do not have the funds with which to do it.

FEDERAL RESPONSIBILITY FOR MAINTENANCE OF LOUISIANA PROJECTS

Mr. DAVIS. With respect to Louisiana projects that you mentioned, Colonel Powers, has there been some further study of the problem there that has indicated that because of the navigation aspects, there is a Federal maintenance responsibility?

Colonel POWERS. Yes, sir.

Mr. DAVIS. To some extent?

Colonel POWERS. Yes. The flood-protection projects for Bayou Teche-Vermilion River and for Mermentau River were superimposed upon the navigation project, and certain portions of each of them are still required and should be maintained by the Federal Government in the interest of navigation, but additional portions are properly local protection matters.

Mr. DAVIS. Can those be separated in such a way that the Federal Government could continue with its maintenance responsibility for what we can refer to quite clearly as navigation without the Federal Government assuming responsibility for the flood-control aspects of the overall project?

Colonel POWERS. Yes, in the event that legislation is provided turning the local protection maintenance responsibility over to the local interests, that can be done.

ANALYSIS OF THE ECONOMICS OF THE PROJECTS NOW BEING MAINTAINED

Mr. DAVIS. In connection with the maintenance of the navigation projects in its report last year, the committee said:

> It is the committee's desire, therefore, that the Chief of Engineers make a thorough analysis of the economic justification of the projects now being maintained. It is requested that the result of this study be filed with the committee not later than January 3, 1954.

Will you give us a report on that?

Colonel POWERS. Such an economic analysis was accomplished by the Corps of Engineers during the fall of 1953 and a report was submitted on January 4, 1954, indicating that 21 of some 268 projects might be considered borderline cases with respect to economic justification. Benefits were not evaluated for four of these projects. Explanations were contained in the report as to why maintenance is accomplished on those projects.

Eight of the twenty-one borderline projects had benefits exceeding the annual cost of operation and maintenance alone, excluding interest on and amortization of the capital costs.

Mr. DAVIS. Will you provide for the record, findings of the survey for each of the 21 projects?

Colonel POWERS. Yes, sir.

(The matter referred to follows:)

Ouachita and Black Rivers, Ark. and La.—This project has been under consideration by the corps for suspension of operation. Traffic on this canalized waterway is now being increased as a result of additional plants locating in the area. In addition, this canalized waterway creates local collateral benefits from providing municipal and industrial water supply and pollution abatement. On the basis of potential traffic and intangible benefits the project is economically justified.

Santa Barbara Harbor, Calif.—This project was authorized for maintenance operations only and there has been no Federal capital investment for construc-

tion. While the benefit-cost ratio of this project on the basis of the evaluated navigation benefits and the average annual Federal maintenance charge is 0.9, the position of the harbor as a refuge and other intangible benefits justify maintenance of the project. In addition local interests have contributed about one-half of the total maintenance expenditures on the project. These funds are contributed to pay for the excess cost involved in pumping the sand to downcoast beaches, thereby correcting serious beach erosion conditions. The annual benefits of this work is estimated to be about $250,000 annually. If the maintenance operations were discontinued substantial erosion damage would occur along these beaches until the harbor entrance was completely filled, thus restoring the littoral drift of sand. Under these conditions all use of the harbor by navigation would be destroyed. While no maintenance dredging is scheduled in fiscal years 1954 and 1955, continued maintenance of this project is considered justified.

Canaveral Harbor, Fla.—The navigation facilities were only recently made available to vessel traffic and in addition to providing a harbor for a large shrimping and commercial fishing fleet it is utilized by vessels attached to the Patrick Air Force Base at Cape Canaveral. These vessels carry military supplies to and from down-range, guided-missile tracking stations. In addition to the cargo vessels utilized for this purpose, this base also operates rescue craft from Canaveral Harbor on patrol duty throughout a large restricted zone offshore of the missile-launching area to minimize danger to shipping during launching operations. The benefits from such military use was not included in the evaluation of benefits as they cannot be expressed in monetary terms. These and other benefits justify the continued maintenance of the project.

Savannah River below Augusta, Ga.—While justified on the basis of prospective commercial traffic, the project provides water transportation to the Atomic Energy Commission plant located adjacent to the navigable channel provided by this project. The channel is currently being utilized for this purpose.

Kentucky River, Ky.—This project has also been under consideration by the corps for suspension of operations due to the decline in commercial use of the waterway. Substantial industrial activity is currently under way principally in coal production in the upper valley. This new commerce is expected to amount to about 1 million tons annually. Since coal is particularly adaptable to barge transportation and the producers have proceeded on the assumption that the waterway will be available, it has been considered warranted to maintain the locks in usable condition for the present. Upon the actual development of coal traffic as planned, the operation and maintenance of the project would be economically justified.

Corea Harbor, Maine.—This harbor, located 12 miles east of Bar Harbor, serves as a harbor of refuge as well as a base for some 40 locally owned fishing and lobstering vessels. Considering the small average annual cost of $1,500 over a period of years and no maintenance having been accomplished since completion of the project in 1938 until 1954, it is considered maintenance dredging in the anchorage is justified to permit most of the vessels to have protection from Atlantic storms and havy swells during periods of low tide.

Isle of Shoals, Maine and N. H.—This harbor, located some 7 miles offshore in the Atlantic Ocean, between 3 islands, serves the local fishing fleet, the welfare of the inhabitants of the islands, and as a harbor of refuge. In view of the nominal average annual cost of $2,500, it is considered that maintenance of this project is justified. Repair work to storm-damage breakwater, initiated and completed in fiscal years 1953 and 1954, was accomplished in order to protect the investment in the harbor facilities.

Grand Marais Harbor, Mich.—Commercial fishing is the principal industry from which direct benefits can be evaluated. However, this harbor is the only harbor of refuge for light-draft vessels between Whitefish Point and Munising, Mich., a distance of 90 miles. Benefits are present in the form of safety to general small-boat navigation, although they are difficult to evaluate in monetary terms. It is considered, however, that such benefits together with the evaluated benefits accuring to the fishing industry justifies the relatively small average annual cost of maintenance. Repair of the harbor's protective structures is being accomplished in the fiscal year 1954.

Leland Harbor, Mich.—This harbor serves the fishing industry which furnishes the only tangible benefits. The project also serves as a harbor of refuge. Exclusion of the project from the Federal maintenance program would seriously affect residents of North Mainton Island, including United States Coast Guard personnel, who are dependent on supplies and services from mainland sources. The project also serves as a harbor of refuge, the next closest port being 35 miles away.

It is considered that the intangible benefits together with the tangible benefits accruing to the fishing industry justify the relatively small average annual cost of maintenance.

Missouri River, Mo.—Two projects—Kansas City to mouth and Kansas City to Sioux City: As these projects are currently under construction and all of the potential benefits have not developed, a benefit-cost ratio based on the present benefits is not an appropriate basis for determining the economic justification of the projects. Based on an evaluation of prospective benefits, the benefit-cost ratio for the overall project is 1.7. Fixing the location of this naturally meandering river through the construction and maintenance of the authorized improvements from Sioux City to the mouth of the river is essential in order that the potential flood control and navigation benefits may ultimately be realized.

New Jersey Intracoastal Waterway, New Jersey.—This project providing a protected inland route for small vessels along the New Jersey coast is in the process of being taken over from the State of New Jersey as authorized. Federal project depth of 12 feet has not been provided to permit contemplated traffic to develop. Maintenance of the banks in the Cape May Canal section and removal of shoals to 6-foot depth in the coastal section of the existing waterway is considered justified from the standpoint of assuring a safe route for commercial traffic and small boat navigation generally.

Niagara River, N. Y.—While the benefit-cost ratio based on the total average annual costs (including interest and amortization) is unfavorable, the benefit-cost ratio based on average annual cost of maintenance is 1.55. The principal items of commerce over this waterway are sand and gravel and chemical products. Without sufficient channel depth, the shipping costs would undoubtedly affect the economy of the area. On this basis, it has been considered desirable to continue maintenance of this project.

Drum Inlet, N. C.—Drum Inlet is a connecting channel between Core Sound and the Atlantic Ocean, and its maintenance is justified by the intangible and unevaluable benefits. This area in Carteret County constitutes one of the foremost fishing centers in North Carolina. Fishing and related activities such as the processing and distribution of sea products are an important means of livelihood in Carteret County. In 1953 the controlling depth in the 12-foot channel had been reduced by shoaling to 2.5 feet, accordingly, the channel was restored to project dimensions in that year.

Muskingum River, Ohio.—Locks and dams 2 through 11 of this waterway have been placed in an inactive status and lock and dam 10 has been transferred to the city of Zanesville, Ohio. Lock and dam 1, near the mouth of the river, has been continued in operation principally because of the previously indicated use to be made of this lower section of the river by commercial traffic. In view of the current information developed, action is being taken to place lock and dam 1 in an inactive status, as was previously contemplated as a possibility.

Upper Columbia River, Oreg.—3 projects—Columbia River between Vancouver, Wash., and The Dalles, Oreg.; The Dalles-Celilo Canal, Oreg. and Wash.; and Columbia River and tributaries above Celilo Falls to Kennewick, Wash.: As this waterway is currently under construction and traffic has not fully developed, a benefit-cost ratio based on present navigation savings is not an appropriate basis for determining the economic justification of the three existing projects. Upon completion of the system it is estimated that the annual benefits will be over $7 million, based on prospective commerce. With Bonneville, The Dalles, John Day, and McNary Dams in operation, the total average annual charges attributable to navigation are estimated at approximately $5 million, indicating a benefit-cost ratio of 1.4.

Arecibo Harbor, P. R.—This project is currently indicating a current benefit-cost ratio less than unity. A benefit-cost ratio based on prospective use of the harbor was not developed however, due to the fact that a sufficient period of time has not elapsed since the completion by the Puerto Rico Transportation Authority of the deep-draft terminal facilities in May 1952, to provide firm information on the potential commerce which is expected will develop. The Puerto Rico Transportation Authority, an agency of the Government of Puerto Rico, is actively supporting the development of this area. This development is in part dependent on the availability of adequate deep-draft navigation facilities. A considerable amount of data as to the proposed industrial development in the area has been furnished the Corps of Engineers. Based on the active interest now being taken in the development of the immediate area, it is apparent that increasing usage of the port is definitely planned.

Pawcatuck River, R. I. and Conn.—This project, which has a favorable benefit-cost ratio of 1.5 on the basis of the average annual maintenance costs only (exclu-

sive of interest and amortization) is important to the economy of eastern Rhode Island. The work proposed in the immediate future consists of dredging the entrance section of the channel only. Shoaling in the entrance channel section of the waterway has been heavy due to storm action in breaching and providing a secondary outlet.

Fox River, Wis.—The data presented on this project pertains to the lower river only, the upper section having previously been placed in an inactive status. The principal commodity shipped over the waterway is coal. Additional benefits are derived from hydroelectric and industrial water use, and recreational craft utilizing the waterway. These latter benefits cannot readily be determined. The responsibility of controlling water levels in Lake Winnebago and the pools created by the locks and dams in the lower Fox River is also involved. Continuing studies are being made to reduce annual maintenance and operation costs to a minimum.

Colonel POWERS. These projects were justified on the basis of prospective additional traffic, which would justify the continuation of the maintenance of the projects.

Four projects were justified on the basis of intangible benefits as harbors of refuge; and one project was justified on the basis of local contribution supplementing Federal maintenance costs. Two projects are being given further consideration, as previously reported, regarding their operation. These are the lower Fox River, and the Muskingum River.

Three projects are justified on the basis of intangible or unevaluable benefits, primarily prospective developments in the area. Arecibo Harbor, P. R., and the New Jersey Intracoastal Waterway are in this group.

General CHORPENING. I think it is worthy of mention that in connection with this report, we took only those projects that we have maintained in the fiscal year 1953, those that we are maintaining in the fiscal year 1954, and those that we propose to maintain in the fiscal year 1955, which we consider responsive to the desires of the committee.

Mr. DAVIS. That analysis then has not resulted, immediately at least, in a proposal for the reduction of scope of the maintenance program?

Colonel POWERS. In one particular case, involving the continued operation of the lock and dam No. 1 on the Muskingum River, instructions have just been issued to the division to issue a statement to local interests that we intend to suspend operations there within 90 days. An additional result of this economic analysis, is that it is now our policy for every maintenance project to be subjected to formal economic analysis and justified prior to the inclusion of a tentative allocation for maintenance funds.

General CHORPENING. I think there is another point here; that is, at the present time there are 1,000 navigation projects, countrywide, which have been constructed and which are eligible for maintenance. However, in these 3 fiscal years we have programed or are programing maintenance upon only 268 projects.

Colonel POWERS. We have placed in the record a list of the number of projects which have been maintained each year since 1947 and on which maintenance is proposed in 1955. A total of 268 projects are being maintained during the 3-year period ending fiscal year 1955. Some of the projects are maintained only once during that period. There has been a constantly descending number of projects being maintained.

Mr. DAVIS. Even though we do have a list of tentative allocations of projects given in the justification, I understand the policy in the past has been to allocate lump sums to the various divisions and they, in turn, parcel it out to the projects. Is that the way it has been handled?

Colonel POWERS. No, sir. In the past the division engineers have submitted their recommendations just before the appropriations were to be utilized, based on the current conditions at that time, and in accordance with such criteria as had been established for maintenance for the next fiscal year. Those recommendations are on a project-by-project basis, and priority concerning the needs within the particular division.

Those are carefully reviewed in accordance with the overall criteria for the expenditure of the funds during the following year and tentative allocations made, such as are furnished with this budget presentation. We have found, in the past, and it has been noted in the hearings of this committee, that there have been considerable changes and adjustments from the time the tentative allocation is made until the time the money is actually allocated and expended.

It has been difficult to determine a method by which the committee can better be informed as to the maintenance requirements of individual projects and actual current conditions at the time of appropriation.

We have reviewed and revised our procedure for the fiscal year 1955 and the figures before you now were prepared, as before, on the basis of the recommendations made during the fall of 1953 and they are currently being reviewed in accordance with conditions existing in the middle of January. They will be reviewed again in accordance with conditions as of April 30, and if the committee so desires, we can furnish the committee in May an allocation statement as of the 30th of April.

With this procedure, we expect that the initial allocations in the fiscal year 1955 will be very close to the determinations made in May. Beneficial results have been obtained from the quarterly check on the allocations, which the committee directed us to make this year. We are now extending our simplified allotment procedure to provide that every time a division engineer makes a change in allocation exceeding 20 percent for a project allocated more than $100,000, or $20,000 for a project allocation under $100,000, he will inform us without delay as to the basis of the justification therefor. If any newly determined requirements are not greater than the priority which was set up in any area, then the adjustment is made within the area.

However, if there is an emergency requirement for any project work for which additional funds are required, a report must come to the Office of Chief Engineer for approval of the work.

Mr. DAVIS. So far as the law now is concerned, you have unlimited authority to transfer funds from one maintenance project to another?

General CHORPENING. That is correct; and in the early hearings I think we have commented on that and pointed out the real necessity and advisability of having freedom on our part to transfer funds. I want to say the quarterly check that the committee required us to

make this year has been helpful to us in our operations, and I appreciate the committee having brought it to our attention.

Colonel POWERS. I would like to point out, Mr. Chairman, that, as has been stated before, the funds appropriated in recent years for navigation projects have not been in sufficient amounts to provide for all required maintenance; therefore, we have worked on restrictive criteria, which can result in severe breakwater and jetty deterioration, loss of loading capacity for commercial vessels, delays to commercial traffic, damage to vessels and machinery and, in some cases, actual deprivation of the local communities receiving benefits of cheaper water transportation.

Continuing review of conditions is necessary because, should any 1 of the 5 effects I have mentioned, create undue hardship then we must change the allocations. And that is one reason why we must have the authority to make the adjustments through the year if they are found necessary.

Mr. DAVIS. It appears the necessity to have rather large variations from tentative allocations to actual allocations does occur in New England where special assistance is actually called for.

Colonel POWERS. Yes. In the New England division there are approximately 158 channel and harbor projects, and most of these are coastal projects. The normal deterioration of these projects is clearly affected by coastal storms in no set pattern. Frequent coverage of all projects by the execution of condition surveys is prohibitive in cost. Historical records of project behavior, storm occurrences and notices or complaints from maritime interests are used as the basis for determining a program of condition surveys. For budget presentation, initial determination of maintenance requirements is made on the basis of information secured from these sources. During the interval between preparation of the budget and the allocation of funds, additional condition surveys are made in accordance with the previously planned program, and as a result of storm occurrences and complaints received. These frequently indicate the development of critical situations in projects which have been previously considered to have been in a satisfactory status.

Since additional funds cannot be made available at the time of allocation, it is necessary that the overall program be reconsidered and new priorities established with respect to the degree of criticality existing among the projects assigned to the New England division. The division engineer requests and obtains from the Chief of Engineers additional funds when unforeseen circumstances increase his maintenance problem to a point where the general status of all of his combined projects is considerably worse than forecast at the time of preparation of the budgetary submission. Such additional funds must be obtained from elsewhere in the national program.

DETERIORATION OF NAVIGATION STRUCTURES ON THE GREAT LAKES

Mr. DAVIS. In the Great Lakes area, there has been a considerable deterioration of navigation structures in particular. What can you tell us about that?

Colonel POWERS. Again, in the Great Lakes division, we have approximately 137 channels and harbor projects. The amount of maintenance funds for such projects has remained fairly constant in

the past 5 years though construction costs have been increased by nearly 60 percent during that period. This has resulted in inadequate maintenance of the federally-constructed channels, harbors and structures, there being a large backlog of such work. During recent years, dredging has not generally been performed to full project depth, as some reliance has been placed on the abnormally high lake levels in the Great Lakes area to aid in providing navigation depths in some of the harbors. The diminishing lake levels will now require a greater than usual amount of dredging work. Further, the trend towards utilization of larger vessels increases the need for maintenance of project depths. In this connection, the lake vessels take advantage of channel depths to carry up to an additional 100 tons of ore for each inch of available depth. The high lake levels have caused considerable damage to our federally constructed structures through overtopping wave action. Normally, rubble mound structures require periodic maintenance to retain their integrity.

Once such a structure is breached, deterioration is very rapid and the ultimate cost for reconstruction can greatly exceed the total costs for periodic maintenance. Continued erosion of shore connections of structures results in land losses and shoaling in channels. We have been hard put in maintaining the structures in the Great Lakes area, and funds have been carefully husbanded for repair and renovation of works in such of those areas where it is economically necessary to proceed with their rehabilitation.

DE-AUTHORIZING OF PROJECTS

Mr. DAVIS. How well have you progressed on the legislation with respect to the de-authorizing of some of these projects? Are you prepared to present your suggestions along that line to the Public Works Committee this year?

General CHORPENING. Yes. You will recall, however, that the paper at this time is with the Bureau of the Budget, and copies of it are in the hands of the Public Works Committee, and I believe a copy has been furnished, or is about to be furnished to your committee, as well.

Mr. DAVIS. If those recommendations are followed, I would assume that it would affect the maintenance of some of the projects that are included here for maintenance funds in the 1955 fiscal year, would it not?

General CHORPENING. None of the project works for which we have requested maintenance funds in the coming fiscal year are included in the projects that we have furnished as becoming inactive. That list of inactive projects includes largely authorized work not yet started.

Mr. DAVIS. The clerk informed me that maybe there are some of those included in your recommendation.

General CHORPENING. The inactive list does include the names of some projects for which only a portion of the work is considered obsolete. Inactivation of the obsolete portions would not affect current maintenance requirements which are only for those projects and parts of projects still needed.

CHANNELS AND HARBORS

Mr. DAVIS. The subcommittee will resume this afternoon with the item of "General operation and maintenance of the channels and harbors," and I assume pages 707 and 708 of the justifications will serve for the purpose of a general statement with respect to this matter?

General CHORPENING. Yes, sir.

(The matter referred to follows:)

1. NAVIGATION

(A) CHANNELS AND HARBORS

The work under this activity consists of dredging to maintain project dimensions in navigation channels and anchorages of coastal and Great Lakes harbors and waterways; repairs to harbor jetties and breakwaters and channel stabilization works on inland rivers; and operation and maintenance of navigation structures on intracoastal waterways; all as authorized in the laws adopting river and harbor projects. The budget estimate of $42,335,000 for fiscal year 1955 is required for essential maintenance work on the authorized projects in the list which follows. Funds appropriated in recent years for this activity have not been in sufficient amount to provide for full maintenance of our important waterways. This situation continues to exist with the amount submitted in the budget estimate. The past necessity for partial maintenance or no maintenance on structures is revealed in the poor condition of many jetties, breakwaters and other protective structures. In the Great Lakes and Pacific coast areas for example, some structures now need almost complete replacement instead of repairs of a minor nature. This policy is extermely uneconomic in that reconstruction of structures is much more costly than recurrent repair and results in the structures not serving their intended purpose. Partial maintenance dredging of channels also is uneconomic and a serious impediment to the free flow of commerce. Partial dredging of channels to serve a minimum purpose will not fully care for the major commerce on a waterway and, as a result of vessels scraping the bottom or through turbulent propeller wash on the sides of a restricted channel, will cause a higher rate of shoaling with resultant damage to vessels. The frequency of maintenance also is increased thereby, which directly affects the cost of maintenance over a period of years. Maintenance of channel regulating works is particularly applicable to the Missouri River from the mouth to Omaha, Nebr., where funds provided have been insufficient to maintain completed structures in a satisfactory condition, and where proper alinement of the channel must be stabilized before work can be safely undertaken on the flood control levees. The condition of structures on this waterway have been aggravated by recurrent major floods and ice damage. A considerable amount of repair work on the dikes and jetties constructed at the passes of the Mississippi River is desirable to provide a more stable channel and decrease the annual dredging requirements for this important passageway to the ports and harbors on the inland waterway systems of the Mississippi River and its tributaries.

Provision of adequate funds for maintenance requirements is especially urgent in view of the large volume of commerce being moved on our improved waterways and harbors. Statistics for the calendar year 1952 reveal that the harbors and waterways of the United States carried 887,250,000 tons of waterborne commerce, which represents a continuation of the high level of activity experienced in recent years. Our waterways should be placed in condition to assist to the fullest extent possible in alleviating any transportation emergency.

The budget estimate of $42,335,000 will provide only for maintenance requirements on the most urgent projects necessary in the interest of defense and essential domestic requirements and will result in the continued postponement of work required on many other harbors and waterways where shipping is made possible only at reduced draft or by placing reliance on the range of tide to permit cargoes to be delivered. This maintenance program provides principally for dredging. Repair of structures will necessarily continue to be deferred except where shipping is materially affected thereby. The estimate also provides for maintenance and operation of navigation structures and structures over canals, such as bridges over the Chesapeake and Delaware Canals, and locks on the Intracoastal Waterways. Funds are included in the estimate for operation and maintenance of a total of 16 bridges and 11 locks as well as for additional bank protection and pile dikes

required to maintain a stable channel on the Mississippi River between the Ohio and Missouri Rivers, which has been subjected to severe damage as a result of floods in 1951 and 1952.

ALLOCATION FOR CHANNELS AND HARBORS

Mr. DAVIS. We have before us this item of $42,335,000 tentatively allocated among a large number of channels and harbors for navigation purposes. Again, these allocations are as best you can estimate them as of this date and you do have unlimited freedom in transferring these funds from one project to another as necessary?

General CHORPENING. We do have that freedom. But I do want to say, as has been brought out in the testimony, that it is our best estimate and we make these changes only after full consideration by our office as to the needs.

Mr. DAVIS. You have furnished to the committee a tabulation showing the actual allocations that have been made of fiscal year 1954 funds, as compared to the tentative allocations you furnished the committee in the hearings a year ago. Some of them appear to be substantial; although, by and large, the actual allocations seem to follow the tentative allocations.

I will ask with respect to Mobile Harbor, for instance, the reason for that large variation.

Colonel POWERS. With respect to Mobile Harbor, there was tentatively allocated last year $480,000 for the execution of an amount of dredging work in connection with the entrance channel and inner channels. In making condition surveys just prior to programing the work for this year, it was found materials at the entrance were relatively soft and we determined that we could defer the hopper dredging at the entrance until next year and go ahead with the inner-harbor maintenance and let the entrance channel hopper dredging be done next year. You will notice that this is programed in the 1955 budget.

Mr. DAVIS. For San Rafael Creek, Calif., you had no tentative allocation and you actually allocated something over $100,000. Can you give us the reason for that?

Colonel POWERS. In prior years we had deferred dredging of San Rafael Creek and this year discovered from local complaints and our reconnaissance survey that the channel had shoaled to a 3-foot depth in a project that had a depth of 6 feet 2 years ago. Because of those conditions, it was necessary to move in this year and accomplish that critical dredging.

Mr. DAVIS. At Bridgeport Harbor, Conn., you tentatively allocated $175,000, and it appears no actual allocation is now being made on that.

Colonel POWERS. Bridgeport Harbor is similarly a harbor where dredging was planned to be performed this year; but on a review of the actual conditions, as reported by the maritime interests of the New England area, it was determined there were more critical conditions existing elsewhere. Bridgeport Harbor was therefore deferred until 1955, and you will find that it is included in the 1955 program.

Mr. DAVIS. At New Haven, Conn., you tentatively allocated $152,000, but apparently none is being actually used there, but $190,000 is being used at Norwalk.

Colonel POWERS. Again a restudy of the relative urgency of work in that area indicated it would be best to defer the New Haven Harbor project until 1955, and it was included in the 1955 budget.

At Norwalk Harbor, condition surveys indicated a controlling depth of 4 feet in a 12-foot channel, and it became urgent to accomplish work there.

Mr. DAVIS. At Jacksonville Harbor, Fla., the estimated allocation was $171,000 and the actual allocation has been $290,400.

Colonel POWERS. Jacksonville Harbor is a major deep-draft navigation improvement and it was found by condition surveys that the stabilization of the channel for a portion of the new work had not progressed actually to the point where it was previously expected it would. The original allocation of $171,000 was applied to the same work that is being accomplished, but the dredging quantities were excessive.

Mr. DAVIS. In Louisiana, Calcasieu River and Pass had a tentative allocation of $193,000 and you actually allocated $375,000.

Colonel POWERS. Similarly, Calcasieu River and Pass was recently completed to a 35-foot project depth, and the stabilization of the banks and side slopes of the channel had not occurred as was expected.

Mr. DAVIS. In Boston Harbor, the tentative allocation was $205,000 and the actual allocation appears to be $7,500.

Colonel POWERS. The condition of the deep-draft channels in Boston Harbor was such that some vessels had to wait for high tides, but the majority of the commerce could transit the project channels at the existing depth. It appeared, in the absence of a hopper dredge available for that particular location, that it was best to defer the dredging until 1955; and it was so programed with the thought there would be some more shoaling and a more adequate justification for performing the work in 1955.

Mr. DAVIS. At Holland, Mich., there was a tentative allocation of $136,000 and the actual allocation appears to be a little under $18,000.

Colonel POWERS. I will have to furnish a statement on that.

(The matter referred to follows:)

The major decrease for Holland Harbor was due to deferment of reconstruction of the north pier as this work was less urgent than additional dredging found necessary at other major harbors in Michigan.

Mr. DAVIS. There appears to be some rather unusual generosity in the allocation for New Jersey here. I notice three inlets, Absecon Inlet, Barnegat, and Cold Springs, where there were no tentative allocations, and the actual allocations have been in excess of $200,000.

Colonel POWERS. Absecon, Cold Springs and Barnegat Inlets are exposed to the effects of coastal storms and experience has proven that usually every year the Absecon channel shoals and it is necessary to bring in a shallow draft hopper dredge to dredge at that location. There was no tentative allocation in 1954. Because of the low amount of maintenance funds available, it was determined to take a calculated risk and not provide in the 1954 budget for the dredging in those areas. However, storms in the spring and summer of 1953 did shoal those areas, particularly at Absecon Inlet, and with the availability of a shallow draft hopper dredge in that area at that time it was then economical in order to prevent excess accumulations to move in and do the dredging at Cold Spring, also. At Barnegat Inlet, a condition survey was made but no dredging accomplished.

Mr. DAVIS. New York and New Jersey channel appears to have had a tentative allocation of $317,000 and an actual allocation of $192,000.

Colonel POWERS. Part of the work previously programed in New York and New Jersey channels was deferred until 1955 on the basis that the condition survey indicated shoaling had not progressed as previously expected.

Mr. DAVIS. At Newark Bay, there was a large tentative allocation and only about $15,000 was actually allocated.

Colonel POWERS. A large portion of the funds previously tentatively allocated was for dredging in the upper limits of the project, 20-foot and 16-foot channels. On a review this year, in accordance with our restrictive criteria it was determined that other channel-maintenance work throughout the country was more critical than these moderate-draft channels.

Mr. DAVIS. In the Hudson River Channel, it appears the allocation was about $120,000 more than was tentatively planned.

Colonel POWERS. That is based on increased quantities over those estimated.

Mr. DAVIS. In Cleveland Harbor, the actual allocation appears to be about $220,000 less than the tentative allocation.

Colonel POWERS. I will have to furnish the information concerning Cleveland Harbor later.

(The matter referred to follows:)

The decrease at Cleveland is due to reevaluation of fund requirements including the availability of funds carried over from prior years. Total available for expenditure on the project during fiscal year 1954 is $914,600.

Mr. DAVIS. At Conneaut Harbor, there was a tentative allocation of $204,000 and actual allocations of slightly under $67,000.

Colonel POWERS. With the funds actually allotted, a certain amount of pier repairs and a small amount of dredging was programed to be accomplished. Approximately $124,000 of pier repairs is being deferred and we are taking a calculated risk in that respect.

Mr. DAVIS. In Oregon, on the Umpqua River, the tentative allocation was only a little over $55,000 and the actual allocation was $220,000—about four times as much. Please explain that.

Colonel POWERS. It was determined after the beginning of the fiscal year that structural repairs were necessary to the training jetty to reduce certain maintenance dredging that was required. The jetty had failed to the point where the inlet was shoaling up.

Mr. DAVIS. In Rhode Island, the Seekonk River had no tentative allocation and the actual allocation was $225,000.

Colonel POWERS. Dredging in the Seekonk River has been deferred over a period of a number of years. Due to complaints of maritime interests a survey was made this summer. It was determined the entrance channel had shoaled from 16 feet down to 13.2 feet and a majority of the vessels using the channel could not traverse it safely.

Mr. DAVIS. At Galveston, Tex., the tentative allocation was $222,000 and the actual allocation was $413,000.

Colonel POWERS. At Galveston Harbor, the majority of the increase was occasioned by additional dredging of the entrance channel by a hopper dredge. Previously we had determined we would take a risk and not bring in a hopper dredge this year; but we found it necessary based on a survey to proceed with the hopper dredging.

Mr. DAVIS. In the Houston Ship Channel, only about one-third of a substantial tentative allocation of $1,032,000 was actually allocated.

Colonel POWERS. In the Houston Ship Channel it was determined that a number of the areas which we had expected to be shoaled up this year had not shoaled and the division engineer recommended that the funds be not utilized this year.

Mr. DAVIS. In Wrangell Narrows, Alaska, you had a tentative allocation of $145,700 and no actual allocation.

Colonel POWERS. Similarly, a condition survey prior to programing work within the fiscal year showed the expected shoaling had not occurred, and dredging can be deferred.

Mr. DAVIS. Calumet River, Ill., no tentative allocation and an actual allocation of nearly $60,000.

Colonel POWERS. A portion of the funds required for Calumet River and Harbor are being used to carry on condition surveys and operation studies largely in connection with a determination of the liability of industry for having placed illegal deposits of flue dust in the channel. These deposits are in violation of section 13 of the 1899 River and Harbor Act. There is a small amount of work on the breakwater structure required. The main portion of the funds is for working out with the steel companies their responsibility in respect to removing from the channel the shoals which the effluents from their sewer discharges have caused.

Mr. DAVIS. What recourse does the Corps of Engineers have in the case of illegal deposits such as that?

Colonel POWERS. Up to the present time, our efforts have been expended in the direction of pointing out to the industrial concerns where they, by their action in operating their sewage outflows, have caused shoaling in the channels and attempting to reason with them and explain the necessity for the removal of their own deposits which are made illegally. We cannot force them to pay their proportionate share, but upon negotiation in a number of places they have paid their proportionate cost of removal.

As a matter of fact, on the Calumet River it has been done before. In 1951 each of the steel companies involved paid its proportionate share of removal of the flue dust settlement in the river, but this time it does not appear they are all willing to continue on that basis. And if they are adamant in their position, we will have to take action through the Department of Justice to prevent them from continuing to put the material into the river without adequate arrangements to safeguard the interests of navigation.

Mr. DAVIS. Certainly they recognize that their harming of the maintenance projects of this kind is a very great deterrent to any future structures of that nature in that area, do they not?

Colonel POWERS. It has been pointed out to them. The Interlake Iron Corp. and International Harvester, the Wisconsin Steel Division, are willing to pay their proportionate share provided the third company, Republic Steel, does so. Republic Steel does not feel they should have any responsibility in the matter. That matter is still under negotiation with the companies.

Mr. DAVIS. Is this related to this Calumet Sag Waterway, where planning funds are in this budget?

Colonel POWERS. No, sir.

Mr. CEDERBERG. Well it is related in a way; is it not?

Mr. DAVIS. It is related to the Calumet Sag Harbor project.

Colonel POWERS. Yes, sir; it is in the same general area to be benefited by Calumet Sag project. We have not allocated any maintenance money for channel dredging there until this matter is settled.

Mr. CEDERBERG. Actually Calumet Sag will have an effect upon Calumet Harbor and all of the industries in that area; is not that correct?

Colonel POWERS. Yes, sir; that is correct.

Mr. DAVIS. You have a similar problem at Cleveland of this illegal deposits?

Colonel POWERS. Yes, sir; we have a similar problem at Cleveland and the difficulty there is with the same firm, Republic Steel. And in every other instance that has come to my attention, the offending companies have been agreeable to paying their proportionate share. That has happened in 4 or 5 places.

Mr. DAVIS. Republic Steel is certainly one of the major beneficiaries of the improvement of the Cuyahoga River; is it not?

Colonel POWERS. Yes, sir.

FLEXIBILITY OF FUNDS

Mr. HAND. Colonel, the general flexibility with which you are allowed to operate in these line items, transferring almost without limit from one to another, also extends, does it not, to an item which is not included in the line items as such, and we can have an item which has not been put before us at all and you can transfer funds to it during a fiscal year if you find it necessary to do it?

General CHORPENING. That is correct. In other words, on any of the navigation projects in the Nation that have been completed we might use some of these funds to take care of maintenance.

Mr. HAND. What happens if you have a tentative allocation for project X and you find there is no reason to change that particular project one way or the other; but something happens which prevents you from spending it, or which does not make it necessary to spend it: Is that invariably transferred to another project, or does that tentative allocation hold over, assuming you have any unexpended balance, or unobligated balance, at the end of the fiscal year?

General CHORPENING. It works in this way: We have been on a very austere basis of maintenance countrywide and if we are unable for one reason or another to use funds at a place where they had been tentatively scheduled, there are many other places where we can properly use and should use the money, that either require maintenance or preventive maintenance.

Mr. HAND. Generally speaking, in effect, if an allocation were not used for any reason, it would undoubtedly be absorbed in some other item and would not hold over until the following year?

General CHORPENING. That is correct.

Mr. HAND. Tentative allocations, then, made in fiscal 1954 for project X which was not used for that project, would not be available for 1955.

General CHORPENING. But as has been pointed out here, in nearly all of the cases where we did not do maintenance scheduled in fiscal 1954, where it had been planned to do it in 1954, the maintenance is set up in our 1955 schedule; because, in the normal course of events,

we would not have set forth the project for maintenance unless it is clearly imminent that we ought to be doing something there. So if we postpone work in a channel for 1 year, it would normally be programed the next year.

Mr. HAND. In some amount, but not necessarily in the same amount.

General CHORPENING. That is correct; yes, sir.

REDUCTION IN BUDGET REQUEST

Mr. RILEY. General, this is a couple of million dollars less than last year's request.

General CHORPENING. That is correct.

Mr. RILEY. You feel you can do approximately the same work with the funds requested?

General CHORPENING. No, sir.

Mr. RILEY. I will put it this way: It will take care of approximately the same amount of necessary work as you could with last year's appropriation.

General CHORPENING. In the amount of the appropriations that are being requested this year, Mr. Riley, in the maintenance field we are placed more on a "fire department" basis than we have been before. In other words, we have to do our best in our allocations and in our operations throughout the year to be ahead of situations developing, and to utilize the funds that we do have available to us for work in those channels and harbors where the greatest good will be done for the commerce of the Nation.

Mr. RILEY. Well would it be a fair statement to say you are reduced to a point where you can do only the absolutely essential and necessary work of maintaining the water-transportation system?

General CHORPENING. That is correct, sir. And as was brought out, I believe, by General Sturgis in other testimony, we feel as soon as the overriding financial situation of the Nation permits, we should get on with a lot of very essential preventive maintenance that otherwise in the long run will cost more money to carry out.

Mr. RILEY. So far as you know, there is not anything in this request that should be or could be deferred.

General CHORPENING. No, sir.

LOCKS, DAMS, RESERVOIRS, AND CANALS

Mr. DAVIS. We will turn to the "Maintenance of locks, dams, reservoirs, and canals" and we will assume that page 717 will serve as a general explanation of that.

(The matter referred to follows:)

1. NAVIGATION

(B) LOCKS, DAMS, RESERVOIRS, AND CANALS

The work under this activity is the operation, maintenance, and repair of locks and canals on navigable rivers and inland waterways, and dredging to maintain project widths and depths in the open reaches of those rivers and inland waterways, as differentiated from the maintenance of channels and allied facilities on coastal and Great Lakes harbors and coastal waterways on which work is carried out under the preceding activity. The estimate of $19,790,000 for the fiscal year 1955 is for the operation and maintenance of these waterways. Continued in-

creases in the volume of commerce carried on the inland waterway system, 63.5 billion ton-miles in 1952 representing an increase of 1.5 billion ton-miles over 1951, makes it imperative that those waterways be adequately maintained to permit the carrying out of their part in transporting the vast quantities of materials required for both defense and civilian activities. As demonstrated during World War II, the inland waterway system is an efficient and economical transportation facility for the passage of bulk commodities to manufacturing centers and the transit of vessels from construction yards in the country's interior to open ports.

As the funds appropriated in recent years for this activity have not been sufficient to keep pace with the repair workload, certain repairs and structural replacements as well as channel maintenance have been deferred from year to year with only the most urgent work on projects necessary in the interest of defense and essential domestic requirements being accomplished. These restrictive standards will continue in force during fiscal year 1955 with the budgeted amount. The funds requested for these active projects in fiscal year 1955 are needed to assure efficient operation, adequate maintenance and essential repair of structures of the inland waterway system being subjected to increasingly heavy usage and to provide for the newly completed navigation facilities being added to the system. Full-time operation on some waterways handling a limited volume of commerce has been curtailed in recent years and, in some cases, operation of such waterways by the Federal Government has ceased entirely. Any reduction below the budget estimate would require the curtailment of work on the more important waterways with a resultant decrease in the efficiency of these commercial arteries.

Mr. DAVIS. There appear to be a couple of important deviations from the tentative allocation, one of them in Kentucky, the Green, Barren, and Nolin Rivers, and Bear Creek, where a tentative allocation of $92,000 was jumped to an actual allocation of $303,000.

Colonel POWERS. I should like to supply that for the record.

(The matter referred to follows:)

The major increase for the Green River system results from the recently stated desires of the Atomic Energy Commission in the rehabilitation of this waterway for its transportation needs. The increased allocation of funds provides for the general design and planning for replacement of locks and dams 1 and 2 under the authorized replacement program in addition to the additional dredging operation previously scheduled to be deferred.

Mr. DAVIS. In Louisiana, on the Pearl River, La., and Miss., the tentative allocation was upped from under $40,000 to more than $111,000.

Colonel POWERS. I will supply that for the record.

(The matter referred to follows:)

The Pearl River improvement was opened to navigation in 1953. Under the initial maintenance program, the removal of shoals and snagging operations were deferred. However, as erosion has occurred adjacent to the canal since its construction, together with abnormally low water conditions during the fall this work could not be deferred as planned. Accordingly, additional funds had to be allocated.

Mr. DAVIS. In view of the comments with respect to the Okeechobee waterway which appeared on page 570 of the record last year, where you explained the reduction of the maintenance and the reduction in number of operating personnel on that waterway, how do you explain the increase in your tentative allocation to $113,000 in the 1955 fiscal year?

General CHORPENING. I think that will have to be supplied for the record.

(The matter referred to follows:)

The tentative allocation of $113,000 for the Okeechobee waterway during fiscal year 1955 is $11,000 more than the amount available for obligation during fiscal year 1954. That amount, $102,000 is nearly $26,000 less than the actual obligation of $128,322 for fiscal year 1953. This decrease is due in part to the savings

realized by curtailment of lock operations placed into effect early in the fiscal year 1954. The small increase in fiscal year 1955 is for sandblasting and painting of metal surfaces at Moorehead locks and for rehabilitation work at the Ortona and St. Lucie locks. This work consists of the construction of protective fender system at the upstream side of each of these locks. During periods of heavy discharge from Lake Okeechobee through the Caloosahatchbee and St. Lucie Canals the drawdown immediately upstream of the lock spillways creates a hazardous navigation condition, as the boats are drawn toward the spillways as they approach the lock. The fender systems are accordingly being provided as a safety measure for human life and protection against damage to the lock and spillway structures. Other operations scheduled on the waterway are comparable to the work being performed during the current fiscal year which includes dredging and snagging.

CONDITION OF LOCKS, DAMS, CANALS, AND RESERVOIRS

Mr. RILEY. Are any of these locks, dams, reservoirs, and canals causing you excessive maintenance by reason of their being in an old, dilapidated and obsolete condition?

Colonel POWERS. Yes, sir. The operation and maintenance of many of our locks and canals and dams is excessive because of their delapidated state, particularly in the Green River and Ohio River system, and is much more expensive than it should be.

Mr. RILEY. You consider those good examples?

Colonel POWERS. Yes, sir; and the Warrior River system.

Mr. RILEY. They are good examples of excessive cost because of that.

Colonel POWERS. Yes, sir.

General CHORPENING. We should point out again that where, as in the budget, we are asking for construction funds on the Warrior lock and dam to replace two old structures, we are doing the very minimum work required to keep them operable until the new one is built.

Mr. RILEY. Even at that, the maintenance and operation cost are high; is not that right?

General CHORPENING. Much higher than they ought to be and we are taking a considerable calculated risk in many places in what we are actually expending.

SURVEY OF NORTHERN AND NORTHWESTERN LAKES

Mr. DAVIS. The third item under "Navigation and maintenance" is the "Survey of northern and northwestern lakes." We will insert page 720 of the justifications in the record at this point to explain the request for $460,000.

(The matter referred to follows:)

1. NAVIGATION

(C) SURVEY OF NORTHERN AND NORTHWESTERN LAKES

The Great Lakes and their connecting channels form a natural transportation highway having a water surface area of over 95,000 square miles and a shoreline of over 8,300 miles, which affords access to a region notable for the magnitude of its natural and industrial resources. The Lake Survey, established in 1841, performs the service of surveying and charting the Great Lakes and connecting streams for navigation purposes, as far down the St. Lawrence River as the international boundary at St. Regis, 66 miles above Montreal. This work is confined to United States territory, except for the depiction of such Canadian waters and shores as may be essential to the integrity and usefulness of charts showing locali-

ties contiguous to the boundary and those covering a whole lake or river. A bulletin showing conditions is published annually, while supplements are issued monthly during the navigation season. The estimate for fiscal year 1955 contemplates continuation of navigation chart coverage consistent with the needs for defense shipping and for continuing studies of Great Lakes levels, and of the hydraulic characteristics of the St. Marys, St. Clair, Detroit, and Niagara Rivers.

Up-to-date navigation charts are essential to the safe navigation and economical operation of ore carriers, other commercial vessels carrying defense materials and for the protection of Coast Guard and other Government craft. This necessitates the revision of survey data, some of which was developed prior to 1875, by more accurate and modern methods in order to safeguard vessels from potential danger of accidents costly to the carriers and the defense effort. To bring the quality of Great Lakes charts up to desirable standards, such as those already attained for charts of the Atlantic and Pacific coastal waters, a 15-year program of soundings to supersede those made prior to 1875 is being initiated in fiscal year 1954. The budget estimate proposes continuation of this program during fiscal year 1955.

Inasmuch as the Great Lakes ore carriers and other commercial vessels carrying vital defense materials, as well as Coast Guard and other governmental craft cannot safely operate without up-to-date navigation charts, and in view of the importance of water level records and other hydraulic data furnished to navigation interests, hydroelectric powerplant operators, and riparian owners, it is of vital importance that the amount of $460,000 requested for this activity in fiscal year 1955 be appropriated.

SALE OF NAVIGATION CHARTS

Mr. DAVIS. There was a very complete explanation of this program furnished the committee by Colonel Milne last year. And last year we were told that the revenue from the sale of the navigation charts for the fiscal year 1952 had amounted to $25,683. Can you give us any information subsequent to that?

Colonel POWERS. Yes, sir. The revenue from the sale of navigation charts of the northern and northwestern lakes for the fiscal year 1953 amounted to $38,900.

Mr. DAVIS. A 50 percent increase. This, I believe was anticipated to be a 15-year program to bring this chart work up to date. Would you say that it is on schedule, or are you running behind or running ahead on it?

Colonel POWERS. It appears to be on schedule at the present time. We have proceeded as planned thus far and have gone into a study of the utilization of radio location equipment to endeavor to speed up the work. The results of that will not be available for some time.

Mr. DAVIS. Generally speaking, this is comparable to work which the Coast and Geodetic Survey does on the salt water coasts; is it not?

Colonel POWERS. Yes, sir.

Mr. HAND. Why does not the Coast and Geodetic Survey do this, Colonel?

Colonel POWERS. Congress has assigned this work to the Corps of Engineers for quite some time. Since 1841 we have been organized to do it in that particular area and the Coast and Geodetic Survey is not organized in that area, and we have a close relationship with the transportation lines and cargo carriers that make use of the information available.

Mr. HAND. Does it not occur to you, regardless of the present status of the law, that it would be normally a function of the Coast and Geodetic Survey to do this work?

General CHORPENING. It might be, but I do not feel from the standpoint of economics that it could be done any cheaper by them.

And due to the activities of the Corps of Engineers throughout the Great Lakes on navigation and other matters, it seems in this instance quite apropos that it remain as a Corps of Engineers activity. We have had it for a long time. We have a very highly trained group there whose work to my knowledge has always been extremely well received by the shipping interests and all others with whom we have had to deal.

Mr. HAND. In the sale of these charts, which seems to be a rather significant item and which has increased measurably in the last year, are you applying a typical cost index to these maps and raising the price any as the costs go up?

Colonel POWERS. The price of charts was increased 50 percent last year.

Mr. HAND. That accounts for the 50-percent increase in revenue?

Colonel POWERS. Probably so.

Mr. CEDERBERG. Does this survey tie in directly with the surveys now being conducted by the corps regarding connecting channels to the Great Lakes?

General CHORPENING. Not directly. However, the Lake Survey Office is under the division engineer of the Great Lakes Division. For any surveys assigned to the division engineer, he of course, utilizes the services of the Lake Survey to the maximum in carrying out this responsibility.

Mr. CEDERBERG. As I recall, there was some request last year that survey work be furnished on those connecting channels. I assume you are doing that now.

General CHORPENING. That is correct. We are pushing that as rapidly as we can. We will complete the authorized connecting channel study sometime this fall or early next year.

Mr. RABAUT. Did I understand you to say this was the only large body of water for which you make the maps?

General CHORPENING. That is right, only the very large bodies of water, which are used to a great extent by navigation. Now we do make the maps of rivers for river navigation and for the reservoirs we build, but that is a much different proposition.

Mr. RABAUT. Have you and your organization the facilities for taking depths and all that?

General CHORPENING. Yes, sir.

Mr. RABAUT. The same as the Coast and Geodetic Survey has?

General CHORPENING. Yes, sir.

Mr. RABAUT. You make recordings according to the sounds?

General CHORPENING. That is correct.

Mr. RABAUT. That is a more accurate way of making it.

General CHORPENING. We also use equipment somewhat similar to that used for condition surveys which we make in harbors to determine how much shoaling is there and where to dredge.

FLOOD CONTROL

Mr. DAVIS. The second phase of the maintenance is flood control. We will insert, by way of explanation, pages 721 and 726 in the record.

(The matter referred to follows:)

2. FLOOD CONTROL

(A) RESERVOIRS

The budget estimate of $3,200,000 for operation and maintenance of 99 flood-control reservoirs during fiscal year 1955 represents the absolute minimum amount for essential operational requirements of these projects. This estimate contemplates deferment of considerable work of a less urgent nature to another year. Notwithstanding the fact that 5 reservoirs are approaching or will have reached full maintenance status, and 4 reservoirs are being added to the program in fiscal year 1955, funds included in the budget estimate for fiscal year 1955 are increased by only $100,000 over the amount appropriated for the preceding fiscal year.

(B) OTHER

The budget estimate of $75,000 for fiscal year 1955 provides for the inspection of completed local flood-protection projects located in 31 Corps of Engineer districts. The estimate of $75,000 for fiscal year 1955 represents a reduction of $20,000 from the expected cost in fiscal year 1954 and contemplates the accomplishment of the minimum amount of inspection of local flood-protection works operated and maintained by local interests. The purpose of these inspections is to assure that local interests adhere to essential operating and maintenance requirements as established by the Secretary of the Army so as to provide for the proper functioning of completed works during flood periods.

Mr. DAVIS. Those two items which are listed as "Reservoirs" and "Other," including channel improvement projects, miscellaneous items and inspection total $3,275,000.

Mr. RILEY. There is no income to the Government from these flood-control projects, is there?

General CHORPENING. No direct income; no, sir. I should amend that statement, Mr. Riley, to say that we do lease lands at some of these flood-control projects for agricultural purposes, or for other purposes; also there may be a few projects listed under flood control where we have contracts for municipal water supply.

Mr. RILEY. Does the Department of the Interior lease any of this water for irrigation purposes; do they have any income from any of those reservoirs, or is it strictly flood control benefits?

General CHORPENING. The latter is correct.

Mr. RABAUT. What happens to the money you get from the lease of those lands?

General CHORPENING. Those funds are turned into miscellaneous receipts of the Treasury. Seventy-five percent of those funds revert to the States in which the reservoirs lie, to be used by the States, and I believe in whatsoever fashion they conclude for the benefit of the counties affected. Up until last year, they had to use the money for schools and roads of the counties; but the Congress last year passed legislation that made it less restrictive.

Mr. RABAUT. Twenty-five percent, though, goes into the Treasury?

General CHORPENING. Twenty-five percent goes into the Treasury. That 25 percent approximately covers the cost to the Federal Government of administering the leases and concessions.

Mr. RABAUT. That is according to law?

General CHORPENING. That is correct.

MULTIPLE-PURPOSE PROJECTS INCLUDING POWER

Mr. DAVIS. The third of the group of projects requiring maintenance funds is "Multiple-purpose projects, including power." We

have before us a budget estimate of $9,300,000 and we will insert the explanation which appears on page 727 of the justifications.

(The matter referred to follows:)

3. MULTIPLE-PURPOSE PROJECTS, INCLUDING POWER

The budget estimate of $9,300,000 for the operation and maintenance during fiscal year 1955 of the 28 projects in this category is the very minimum amount necessary for operational requirements. It contemplates the deferment of other than indispensable maintenance, and deferment of a substantial amount of rehabilitation work.

The amount of funds requested in the budget estimate for fiscal year 1955 represents an increase of $344,400 over the amount available for obligation in the preceding fiscal year. These additional funds are needed in order to meet the large increased requirements of 7 projects now approaching full maintenance status or reach such status in the 1955 fiscal year, and 2 new projects being added to the program in fiscal year 1955. These nine projects will add about 10 million acre-feet of allocated flood storage capacity to increase the total of such capacity at multiple purpose projects to about 20 million acre-feet, not including considerable storage at some projects incidental to downstream water flow regulation. A total of 796,600 kilowatts of installed capacity is scheduled to be placed in operation in fiscal year 1955, increasing the total installed capacity at these power projects to 3,313,400 kilowatts. The budget estimate contemplates a reduction in maintenance at those projects that have been in full maintenance status. In view of the importance of these projects to the defense effort, it is essential that the dams and powerhouses be adequately maintained and properly operated.

CONDITION OF BAFFLES AT BONNEVILLE

Mr. DAVIS. With respect to the baffles at Bonneville that we looked at, what can you tell us?

Colonel POWERS. The condition of those baffles is such that a major rehabilitation job must be accomplished within the next few years. We are currently considering, with the multiple-purpose funds held in reserve this year for emergencies, the possibility or practicability of doing another portion of the repair work and detailed planning to undertake a major rehabilitation when sufficient funds can be made available. From time to time we have been spending small sums of money to repair some of those baffles as compared to the total cost. The total cost is over $1 million to make a sufficient repair of the baffles.

Mr. DAVIS. On page 706 of the justifications appears an item for the lower Columbia River fishery development program of $1,040,000, which is for transfer to the Fish and Wild Life Service and that will be justified by the Fish and Wild Life Service tomorrow. That amount makes up the total of $76,200,000 for operation and maintenance.

DELETION OF REQUEST FOR EMERGENCY OPERATION FUNDS

I note this year you have submitted no request for the 3 items of emergency operations, those 3 items being removing sunken vessels and other obstructions to navigation; second, protecting, clearing, straightening channels of navigable waters as specifically authorized by Congress—for instance, work under section 3 of the Rivers and Harbors Act of 1945; and, third, flood control emergency repair, and flood fighting, and rescue work.

What is the explanation for the deletion of the requested funds during this 1955 fiscal year?

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Colonel POWERS. As you have noted, the budget estimate does not provide any funds for emergency operations. In order to meet our absolute minimum operation and maintenance requirements on existing projects, we found it necessary to allocate to those projects the entire amount of the budget estimate available for this appropriation year. In the event funds now available for emergency operations, which may remain unobligated and carried into the 1955 fiscal year, are insufficient, it will be necessary to undertake the removal of sunken vessels and emergency clearing of navigable waters by reallocating some navigation project funds and, in the event of a major flood emergency it might be necessary to request a supplemental appropriation.

General CHORPENING. The chairman will recall that we had in that whole flood-control emergency fund something over $12 million.

GENERAL EXPENSES

Amounts available for obligation

	1953 actual	1954 estimate	1955 estimate
Appropriation or estimate		$9,716,000	$9,800,000
Balance transferred pursuant to Public Law 153, from—			
"Maintenance and improvement of existing river and harbor works"		363,763	
"Flood control, general"		14,245	
"Flood control, Mississippi River and tributaries"		11,543	
Reimbursements from non-Federal sources		10,000	10,000
Reimbursements from other accounts		90,000	90,000
Obligations incurred		10,205,551	9,900,000
Comparative transfer from—			
"Maintenance and improvement of existing river and harbor works"	$2,753,916		
"Flood control, general"	906,671		
"Flood control, Mississippi River and tributaries"	182,865		
"Operation and maintenance, general, Corps of Engineers, civil"		700,000	
Total obligations	3,843,452	10,905,551	9,900,000

NOTE.—Reimbursements from non-Federal sources are received from private individuals, commercial concerns, nonappropriated funds, and States and municipalities (33 U. S. C. 558, 559, 571, 701, and 701k).

Obligations by activities

Description	1953 actual	1954 estimate	1955 estimate
Direct Obligations			
1. Executive direction and management:			
(a) Office, Chief of Engineers	[1] $1,818,508	$2,957,405	$2,950,000
(b) Division offices	(2)	5,006,200	4,540,000
2. Review boards:			
(a) River and harbor board	450,398	488,464	430,000
(b) Beach erosion board	101,670	120,401	110,000
3. Regulation:			
(a) Regulation of hydraulic mining on Sacramento and San Joaquin Rivers (California Debris Commission)	7,573	8,093	8,000
(b) Prevention of illegal deposits in New York harbor	315,795	375,289	250,000
(c) Miscellaneous inspections, issuance of permits, harbor lines, etc	[3] 434,292	754,296	630,000
4. Commercial statistics	[3] 613,650	870,000	782,000
5. Miscellaneous investigations		225,403	100,000
Total direct obligations	3,741,886	10,805,551	9,800,000
Obligations Payable Out of Reimbursements From Other Accounts			
2. Review boards:			
(b) Beach erosion board:			
(1) Non-Federal agencies	11,566	10,000	10,000
(2) Other Federal agencies	90,000	90,000	90,000
Total obligations payable out of reimbursements from other accounts	101,566	100,000	100,000
Total obligations	3,843,452	10,905,551	9,900,000

[1] Represents obligations for salaries, Office, Chief of Engineers, only. Other expenses reflected under other appropriations and activities.
[2] Obligations incurred under this item during fiscal year 1953 are reflected under other appropriations and activities.
[3] Obligations for 1954 and 1955 represent complete financing of this activity from this appropriation. Activity was partially financed in 1953 from project funds; additional 1953 obligations are reflected under other appropriations and activities.

Obligations by objects

Object classification	1953 actual	1954 estimate	1955 estimate
CORPS OF ENGINEERS			
Summary of Personal Services			
Total number of permanent positions		1,691	1,506
Full-time equivalent of all other positions		2	1
Average number of all employees		1,641	1,471
Average salaries and grades:			
General schedule grades:			
Average salary		$4,694	$4,729
Average grade		GS–6.8	GS–6.8
Crafts, protective, and custodial grades:			
Average salary		$3,480	$3,510
Average grade		CPC–5.5	CPC–5.5
Ungraded positions: Average salary		$3,112	$3,112
Personal service obligations:			
Pay and allowance to commissioned officers		$308,100	$298,200
Permanent positions		8,625,173	7,916,102
Other positions		28,300	15,000
Regular pay in excess of 52-week base		33,121	30,398
Payment above basic rates		52,500	52,500
Total personal service obligations		9,047,194	8,312,200

Obligations by objects—Continued

Object classification	1953 actual	1954 estimate	1955 estimate
CORPS OF ENGINEERS—continued			
Direct Obligations			
01 Personal services:			
Civilian		$8,659,094	$7,934,000
Pay and allowances to commissioned officers		308,100	298,200
02 Travel		700,000	550,000
03 Transportation of things		18,000	10,000
04 Communication services		170,000	160,000
05 Rents and utility services		126,970	125,000
06 Printing and reproduction		184,993	175,000
07 Other contractual services		291,112	264,250
08 Supplies and materials		175,000	150,000
09 Equipment		160,000	125,000
13 Refunds, awards, and indemnities		550	550
15 Taxes and assessments		8,268	8,000
Total direct obligations		10,802,087	9,800,000
Obligations Payable Out of Reimbursements From Other Accounts			
01 Personal services: Civilian		80,000	80,000
02 Travel		2,500	2,500
03 Transportation of things		200	200
04 Communication services		700	700
05 Rents and utility services		1,000	1,000
06 Printing and reproduction		6,000	6,000
07 Other contractual services		4,600	4,600
08 Supplies and material		5,000	5,000
Total obligations payable out of reimbursements from other accounts		100,000	100,000
Total obligations		10,902,087	9,900,000
ALLOCATION TO BUREAU OF CENSUS, DEPARTMENT OF COMMERCE			
01 Personal services, permanent positions		1,627	
05 Rents and utility services		1,930	
06 Printing and reproduction		807	
Total obligations		3,464	
SUMMARY			
Summary of Personal Services			
Total number of permanent positions		1,691	1,506
Full-time equivalent of all other positions		2	1
Average number of all employees		1,641	1,471
Average salaries and grades:			
General schedule grades:			
Average salary		$4,694	$4,729
Average grade		GS–6.8	GS–6.8
Crafts, protective, and custodial grades:			
Average salary		$3,480	$3,510
Average grade		CPC–5.5	CPC–5.5
Ungraded positions: Average salary		$3,112	$3,112
Personal service obligations:			
Pay and allowances to commissioned officers		$308,100	$298,200
Permanent positions		8,626,800	7,916,102
Other positions		28,300	15,000
Regular pay in excess of 52-week base		33,121	30,398
Payment above basic rates		52,500	52,500
Total personal service obligations		9,048,821	8,312,200

Obligations by objects—Continued

	Object classification	1953 actual	1954 estimate	1955 estimate
	SUMMARY—continued			
	Direct Obligations			
01	Personal services:			
	Civilian		$8,660,721	$7,934,000
	Pay and allowances to commissioned officers		308,100	298,200
02	Travel		700,000	550,000
03	Transportation of things		18,000	10,000
04	Communication services		170,000	160,000
05	Rents and utility services		128,000	125,000
06	Printing and reproduction		185,800	175,000
07	Other contractual services		291,112	264,250
08	Supplies and material		175,000	150,000
09	Equipment		160,000	125,000
13	Refunds, awards, and indemnities		550	550
15	Taxes and assessments		8,268	8,000
	Total direct obligations		10,805,551	9,800,000
	Obligations Payable Out of Reimbursements From Other Accounts			
01	Personal services: Civilian		80,000	80,000
02	Travel		2,500	2,500
03	Transportation of things		200	200
04	Communication services		700	700
05	Rents and utility services		1,000	1,000
06	Printing and reproduction		6,000	6,000
07	Other contractual services		4,600	4,600
08	Supplies and materials		5,000	5,000
	Total obligations payable out of reimbursements from other accounts		100,000	100,000
	Total obligations		10,905,551	9,900,000

Analysis of expenditures

	1953 actual	1954 estimate	1955 estimate
Unliquidated obligations, start of year			$411,376
Obligations incurred during the year		$10,205,551	9,900,000
Obligations transferred, pursuant to Public Law 153, from—			
"Maintenance and improvement of existing river and harbor works"		75,509	
"Flood control, general"		25,330	
"Flood control, Mississippi River and tributaries"		4,986	
		10,311,376	10,311,376
Deduct:			
Reimbursements		100,000	100,000
Unliquidated obligations, end of year		411,376	411,376
Total expenditures		9,800,000	9,800,000
Expenditures are distributed as follows:			
Out of current authorizations		9,500,000	9,500,000
Out of prior authorizations		300,000	300,000

Mr. DAVIS. We have next the "General expenses, Corps of Engineers, civil," and the amount of the request is $9,800,000. A general breakdown of this amount appears at pages 735 and 736 of the justification, which we will insert into the record at this point.

(The statements referred to follow:)

Summary of projects—direct obligations

Project No.	Purpose of project	Actual obligations, fiscal year 1953	Estimated obligations, fiscal year 1954	Estimate Fiscal year 1955
(1)	(2)	(3)	(4)	(5)
1	Executive direction and management:			
	(a) Office, Chief of Engineers	[1] $1,818,508	$2,957,405	$2,950,000
	(b) Division offices	[2] 0	5,006,200	4,540,000
2	Review boards:			
	(a) River and harbor board	450,398	488,464	430,000
	(b) Beach erosion board	101,670	120,401	110,000
3	Regulation:			
	(a) Regulation of hydraulic mining on Sacramento and San Joaquin Rivers (California Debris Commission)	7,573	8,093	8,000
	(b) Prevention of illegal deposits in New York Harbor	315,795	375,289	250,000
	(c) Miscellaneous inspections, issuance of permits, harbor lines, etc	[3] 434,292	754,296	630,000
4	Commercial statistics	[3] 613,650	870,000	782,000
5	Miscellaneous investigtations	0	225,403	100,000
	Total direct obligations	3,741,886	10,805,551	9,800,000
	Balance transferred, pursuant to Public Law 153, from—			
	"Maintenance and improvement of existing river and harbor works"	0	−363,763	0
	"Flood control, general"	0	−14,245	0
	"Flood control, Mississippi River and tributaries"	0	−11,543	0
	Comparative transfer from—			
	"Maintenance and improvement of existing river and harbor works"	−2,652,350	0	0
	"Flood control, general"	−906,671	0	0
	"Flood control, Mississippi River and tributaries"	−182,865	0	0
	"Operation and maintenance, general, Corps of Engineers, civil"	0	−700,000	0
	Total appropriation or estimate	0	9,716,000	9,800,000

[1] Represents obligations for salaries, Office, Chief of Engineers only. Other expenses reflected under other appropriations and activities.

[2] Obligations incurred under this item during fiscal year 1953 are reflected under other appropriations and activities.

[3] Obligations for 1954 and 1955 represent complete financing of this activity from this appropriation. Activity was partially financed in 1953 from project funds; additional 1953 obligations are reflected under other appropriations and activities.

GENERAL STATEMENT

Mr. DAVIS. General, can you give us an overall comparative preview of what to look for in this request?

General CHORPENING. The committee will recall that this current fiscal year is the first fiscal year that this breakdown in our appropriation has been in existence. Previous to that there had been other arrangements. We, in administering the general expenses account, have had to do considerable reorientation in our own plans which have resolved the problem in connection with such administration.

The amounts over all that are being requested this year are, as I recall, essentially the same as the amounts actually appropriated last year, but, as will be brought out later, we have included in the general expenses request, after consultation with the Bureau of the Budget, a number of items to be paid for out of general expenses, which are not so paid, in the current fiscal year. So that the amount before you represents, considering the item which we defended last year under "General expenses," a considerable reduction.

As we go into the details of the items in here, it will be brought out wherein that occurs. I want to say that overall, I consider that the new budget arrangements and setting up this general expense appropriation title is an excellent one, which we like very much.

Mr. DAVIS. In summary, it appears from the comparative tables which have been set up on page 734 that the requests for a couple of items here appear to be slightly more than a million dollars less than the amount in the current fiscal year.

General CHORPENING. That is correct.

Mr. DAVIS. Last year in the hearings at page 703, there was included a table which showed the distribution of the amount of military personnel by activities. Will you give us a similar table for the current fiscal year?

General CHORPENING. Yes.

(The information requested follows:)

General expenses distribution by activity (direct and reimbursable obligations)

	Summary	Office of Chief of Engineers	Division offices	River and Harbor Board	Beach Erosion Board	Other
Fiscal year 1954:						
Civilian personnel:						
Permanent positions	1,691	357	679	64	40	551
Full-time equivalent of all other positions	2	2				
Average number (man-years)	1,641	349	654	64	39	535
01 Personal services	8,739,094	2,203,300	3,995,294	444,800	175,000	1,920,700
Military personnel	308,100	110,000	169,100	10,500	18,500	
Fiscal year 1955:						
Civilian personnel:						
Permanent positions	1,506	357	612	61	38	438
Full-time equivalent of all other positions	1	1				
Average number (man-years)	1,471	348	598	61	37	427
01 Personal services	8,014,000	2,215,000	3,690,800	392,500	166,500	1,549,200
Military personnel	298,200	110,000	159,200	10,500	18,500	

MANPOWER SURVEY PROGRAM

Mr. DAVIS. Generally, what is the status of the manpower survey program that you compiled since last year?

Colonel WIRAK. The program involves covering each of the divisions at least once a year, at which time the working papers of these divisions surveys of the district are gone over in a great deal of detail.

Mr. DAVIS. Are you prepared to report on that survey at this time?

Colonel WIRAK. I have no details here, but generally speaking, not entirely due to the manpower surveys, but certainly affected by them, has been the overall reduction, of 10.7 percent of our civilian strength. It is a little higher—I mean the reduction is a little higher—on our civilian side than on the military.

General CHORPENING. Over what period?

Colonel WIRAK. Between November 30, 1952, and November 30, 1953.

Mr. DAVIS. You could furnish us a brief statement of the scope of the surveys which have been completed and which we will insert at the conclusion of your statement.

Colonel WIRAK. Yes.

(The information requested follows:)

1. Offices to be surveyed (July 1, 1953 through June 30, 1954):

Installation (A)	Activity (B)	Survey planned (C)	Survey completed (D)
	Lower Mississippi Valley Division.		Oct. 30, 1953
	Memphis District	Sept. 21, 1953	
	New Orleans District	Sept. 28, 1953	
	Vicksburg District	Oct. 5, 1953	
	Mississippi River Commission.	Oct. 12, 1953	
	Lower Mississippi Valley division office.	Oct. 26, 1953	
	Southwestern division		Nov. 13, 1953
	Albuquerque District	Oct. 5, 1953	
	Tulsa District	Oct. 12, 1953	
	Little Rock District	Oct. 19, 1953	
	Galveston District	Oct. 26, 1953	
	Fort Worth District	Nov. 2, 1953	
	Southwestern division office.	Nov. 16, 1953	
	New England division	Dec. 14, 1953	Dec. 19, 1953
	North Atlantic division:		
	Philadelphia District	Jan. 4, 1954	
	Baltimore District	Jan. 11, 1954	
	Washington District	Jan. 18, 1954	
	Norfolk District	Jan. 25, 1954	
	New York District	Feb. 1, 1954	
	North Atlantic division office.	Feb. 8, 1954	
	Office, Chief of Engineers	Feb. 15, 1954	
	Mediterranean division		(1)
	U. S. Engineer Group	Jan. 18, 1954	
	Middle East District	Feb. 1, 1954	
	East Atlantic District	Feb. 15, 1954	
	Mediterranean division office.	Mar. 1, 1954	
	Missouri River division:		
	Fort Peck District	Mar. 15, 1954	
	Garrison District	Mar. 22, 1954	
	Kansas City District	Mar. 29, 1954	
	Omaha District	Apr. 5, 1954	
	Missouri River division office.	Apr. 19, 1954	
	North Pacific division:		
	Alaska District	Feb. 15, 1954	
	Seattle District	Mar. 29, 1954	
	Walla Walla District	Apr. 5, 1954	
	Portland District	Apr. 12, 1954	
	North Pacific division office.	Apr. 26, 1954	
	Upper Mississippi Valley division:		
	St. Paul District	Apr. 19, 1954	
	Rock Island District	Apr. 26, 1954	
	St. Louis District	May 3, 1954	
	Upper Mississippi Valley division office.	May 17, 1954	
Other Engineer installations and activities:			
Beach Erosion Board		Oct. 5, 1953	Nov. 4, 1953
Army Map Service		Oct. 12, 1953	Oct. 29, 1953
Waterways Experiment Station		Oct. 19, 1953	Nov. 6, 1953
The Engineer Center		Nov. 30, 1953	Jan. 25, 1954
Engineer Supply Control Office		Jan. 11, 1954	(2)
Granite City Engineer Depot		(1)	Aug. 28, 1953
Baton Rouge Engineer Depot		Feb. 15, 1954	(2)
Casad Engineer Depot		Mar. 29, 1954	
Pasco Engineer Depot		May 3, 1954	
Chicago procurement office (CE)		(1)	Aug. 20, 1953
Snow, Ice and Permafrost Research Establishment.		June 14, 1954	
New York District procurement office.		(1)	July 14, 1953
Philadelphia District procurement office.		(1)	Aug. 4, 1953

[1] Special.

[2] Canceled.

2. Number of surveys completed July 1, 1953–December 31, 1953: 11 surveys have been completed as indicated in column D of item 1 above.

3. Plans for surveying the remaining offices (January 1 through June 30, 1954) are as scheduled in column C above which have not been completed or canceled as noted in column D.

The divisions not scheduled for survey in this fiscal year are:
Great Lakes Division
South Pacific Division
Ohio River Division
East Ocean Division
South Atlantic Division
The above offices were omitted in order to make special manpower surveys of selected supply and procurement activities.

MANAGEMENT IMPROVEMENT PROGRAM

Mr. DAVIS. This morning I notice you told us about some of the things you had been doing, constructionwise, to keep up to date and to economize on construction costs. Can you tell us about any similar progress you are making with respect to administrative expenses?

Colonel WIRAK. In our management improvement program, we have hundreds of projects which vary from very small improvements to some that are rather major. I did not bring any of that data with me but I could furnish the committee with a list of those we think are outstanding.

General CHORPENING. I would like to add to that this statement, Mr. Chairman. This is our first year, for which 7 months have gone by, on the general expense account. We have, in that 7-month period made some progress, we think, in achieving some changes in our overall organization, and in the determinations where we felt some may require further study.

I think we must, and we intend in the ensuing months, in the next fiscal year, to go into more closely, from the standpoint of civil works only, a more detailed analysis of our division offices to determine whether the number of people in the various parts of these division offices are in fact what are required, based on the workload and the type of workload.

We made reductions this past year, quite considerable in scope, and I think there is a field where we can, if not make reductions, at least more thouroughly convince ourselves that the present organization is required, or should be modified.

I do not know that that is quite responsive to what your question involved, but it is something that we are doing.

This may come up later, but I think this is as good a place as any to add it: Under "General expenses" are included such matters as issuance of permits for navigation structures, and, as is well known, there must be a permit from the Secretary of the Army before a structure can be placed over navigable waters.

We have recently modified our requirements with respect to certain small structures, where previously they had to go through all of the formalities of getting a permit, now a letter is all that is going to be required. Furthermore, effective at an early date, we are going to make charges for the issuance of permits for bridges and for other structures. Those charges have been tentatively established and, of course, those returns will not serve to reduce the requests as to the appropriation before you, but will go into the miscellaneous receipts of the Treasury.

FEES FOR PERMITS

Mr. RABAUT. You refer to charges for permits. What will be the nature of the fees and how much will you charge?

General CHORPENING. The fees will depend upon the size of the structure, generally, and the nature of the permit.

I might mention, for instance, a noncommercial structure or facility, a structure for recreational purposes, or for the protection of a revetment or the dredging of a channel, and so on, where the estimated cost of the work is under $5,000, the fee will be $25.

From $5,000 to $25,000, the fee will be $75, and in excess of $25,000, the fee will be $150.

Then consider, for instance, a bridge, a dam, or tunnel, that is under $50,000, the fee will be $100. Where the estimated cost is up to $500,000 the fee will be $500.

In other words, we try to arrive and it is very difficult at a fair cost for each what appears to be a good average of costs.

Mr. RABAUT. It varies with the size?

General CHORPENING. Yes.

Before we arrived at that, we made a careful analysis of the costs in the field from all of the district offices of what the cost is of processing the permits, and these figures are the result of that field study.

Mr. RILEY. How many district offices do you have at the present time?

General CHORPENING. We have 41 district offices doing civil works, on civil works activities.

OFFICE, CHIEF OF ENGINEERS

Mr. DAVIS. Now, in the "Office, Chief of Engineers," the statement in respect to that appears at page 735 of justifications. The committee has been furnished the personnel data with respect to this office, and we will include that in the record at this point.

(The matter referred to follows:)

General expenses, departmental—Positions, man-years and 01 obligations by component

	Fiscal year 1953			Fiscal year 1954			Fiscal year 1955		
	Number	Man-years	01 amount	Number	Man-years	01 amount	Number	Man-years	01 amount
Executive Office and special assistants	11	11	$77,135	11	11	$86,000	11	11	$86,000
Engineer Comptroller	30	28	145,621	30	29	155,000	30	30	161,720
Engineer Inspector General	1	1	8,392	1	1	8,500	1	1	8,560
Technical Liaison Division	4	4	25,251	4	4	31,500	4	4	31,600
Engineer Provost Marshal	1	1	6,164	1	1	7,500	1	1	8,360
Legal Division	18	15	87,760	18	18	105,000	18	18	105,960
Safety Division	4	4	28,374	4	4	29,000	4	4	29,200
Administrative Service Division	50	45	168,319	50	48	181,000	50	49	187,840
Personnel and Administration	21	20	100,037	20	20	100,000	20	20	101,500
Real estate	25	21	118,056	23	22	135,000	23	23	139,920
Civil works	186	160	1,054,109	195	189	1,336,500	195	186	1,339,340
Total	351	310	1,819,218	357	347	2,175,000	357	347	2,200,000
Consultants				11	2	28,300	10	1	15,000
Grand total	351	310	1,819,218	368	349	2,203,300	367	348	2,215,000

Mr. DAVIS. On page 704 of the hearings of last year appears a tabulation with respect to the personnel ceiling and strength. May we have a similar tabulation showing the estimate for 1955 fiscal year comparable to that?

General CHORPENING. Yes.

(The matter referred to follows:)

General expenses—distribution by activity, direct charges

	Field								Departmental, Office of Chief of Engineers	Total direct obligations	Reimbursable (Beach Erosion Board)	Grand total
	Division offices	River and Harbor Board	Beach Erosion Board	California Debris Commission	New York Harbor	Miscellaneous inspection, etc., and commercial station	Miscellaneous investigations	Total field				
Fiscal year 1955												
Civilian personnel:												
Positions	612	61	19	2	60	352	24	1,130	357	1,487	19	1,506
Full-time equivalent									1	1		1
Man-years	598	61	19	2	58	344	23	1,105	348	1,453	18	1,471
01 Amount	$3,690,800	$392,500	$86,500	$7,200	$200,000	$1,252,000	$90,000	$5,719,000	$2,215,000	$7,934,000	$80,000	$8,014,000
Military personnel: 01 Amount	159,200	10,500	18,500					188,200	110,000	298,200		298,200
Total 01 Amount	$3,850,000	$403,000	$105,000	$7,200	$200,000	$1,252,000	$90,000	$5,907,200	$2,325,000	$8,232,200	$80,000	$8,312,200
Other objects	690,000	27,000	5,000	800	50,000	160,000	10,000	942,800	625,000	1,567,800	20,000	1,587,800
Grand total	4,540,000	430,000	110,000	8,000	250,000	1,412,000	100,000	6,850,000	2,950,000	9,800,000	100,000	9,900,000
Fiscal year 1954												
Civilian personnel:												
Positions	679	64	21	2	82	409	58	1,315	357	1,672	19	1,691
Full-time equivalent									2	2		2
Man-years	654	64	21	2	80	397	56	1,274	349	1,623	18	1,641
01 Amount	$3,995,294	$446,427	$95,000	$7,200	$275,000	$1,423,500	$215,000	$6,457,421	$2,203,300	$8,660,721	$80,000	$8,740,721
Corps of Engineers	(3,995,294)	(444,800)	(95,000)	(7,200)	(275,000)	(1,423,500)	(215,000)	(6,455,794)	(2,203,300)	(8,659,094)	(80,000)	(8,739,094)
Allocation to Census		(1,627)						(1,627)		(1,627)		(1,627)
Military personnel: 01 Amount	169,100	10,500	18,500					198,100	110,000	308,100		308,100
Total 01 Amount	$4,164,394	$456,927	$113,500	$7,200	$275,000	$1,423,500	$215,000	$6,655,521	$2,313,300	$8,968,821	$80,000	$9,048,821
Other objects	841,806	31,537	6,901	893	100,289	200,796	10,403	1,192,625	644,105	1,836,730	20,000	1,856,730
Total program	5,006,200	488,464	120,401	8,093	375,289	1,624,296	225,403	7,848,146	2,957,405	10,805,551	100,000	10,905,551
Corps of Engineers	(5,006,200)	(485,000)	(120,401)	(8,093)	(375,289)	(1,624,296)	(225,403)	(7,844,682)	(2,957,405)	(10,802,087)	(100,000)	(10,902,087)
Allocation to Census		(3,464)						(3,464)		(3,464)		(3,464)

Mr. DAVIS. Also last year there appeared on page 704 a table which showed approximately twice as many people engaged in civil functions as it did on military functions. What is the relationship as it exists now, and I am speaking not about the chief's office but the entire program.

Colonel WIRAK. Corpswide?

Mr. DAVIS. Yes.

Colonel WIRAK. As of December 31, we had authorized, corpswide, 28,441 military and 27,442 civil. Those are authorized that we have from the Army. We have authorized out to military functions 28,077 spaces and for civil functions 25,929 spaces. This is the low ebb of, say, construction activities, so the authorization to the field is less than the authorization to the Chief of Engineers.

General CHORPENING. What you have given is the overall?

Colonel WIRAK. That is overall.

General CHORPENING. What about construction?

Colonel WIRAK. That is corpswide of military functions that I gave you. And the corpswide of civilian functions.

Mr. DAVIS. Last year we had a comparison of the personnel engaged in civil works on military construction activities, and that is what I obviously should have said when I indicated that it appeared you had twice that many engaged in civil functions as you did on Army and Air Force construction.

General CHORPENING. Yes.

Colonel WIRAK. That is substantially correct.

Mr. DAVIS. How do your present figures compare with that? Last year you said 26,390 overall were engaged on civil functions.

Colonel WIRAK. Yes.

Mr. DAVIS. The current figures on that are what?

Colonel WIRAK. The current figure on that is this: We have authorized to the field 25,929.

Mr. DAVIS. Do you have comparable figures for the Army and Air Force construction to the 12,543 that appeared last year as of March 31?

Colonel WIRAK. Yes. I do not have that information in this table. I have the authorization by offices rather than activities.

General CHORPENING. That can be supplied.

Colonel WIRAK. Yes; I can furnish that.

Mr. DAVIS. If you will.

(The information requested follows:)

Corps of Engineers personnel engaged in civil works and military construction activities, Dec. 31, 1953

Total civil functions:	
Civilian personnel	24,420
Military personnel	127
Total	24,547
Military functions (Army and Air Force construction):	
Civilian personnel	11,670
Military personnel	333
Total	12,003

General CHORPENING. You have given the number authorized to the field. What I think the chairman wants is the actual number on the payroll as of December 31, or as of the latest date.

Colonel WIRAK. Yes, I can give that. The actual number on the payroll, military functions, 27,631 on December 31, 1953.

General CHORPENING. And the civil?

Colonel WIRAK. The actual number of civilians on the roll, 24,420 as of the same date.

Mr. DAVIS. Does that mean that would be practically double the number of military personnel?

Colonel WIRAK. No; that is for all activities.

Mr. DAVIS. It is the comparable figure that I would like to know for the Army and Air Force construction.

Colonel WIRAK. Yes, I will furnish that.

(The information requested appears on the preceding page.)

Mr. DAVIS. Will you submit for the record a statement with respect to the number of supergrades that are included in the personnel office of the Chief of Engineers?

General CHORPENING. I can state that. There is one GS–17 and two GS–16's.

Mr. DAVIS. In the Office of the Chief?

General CHORPENING. In the Office of Chief of Engineers, and that is true corps wide.

Mr. DAVIS. Is that true both of military and civilian?

General CHORPENING. That is everything.

DIVISION OFFICES

Mr. DAVIS. Turning to division offices, the statement of which appears on page 738 of the justifications for which there is requests before us for $4,540,000. You told us in response to Mr. Riley's question, that there were 41 district offices in the civil works.

General CHORPENING. That is correct.

Mr. DAVIS. The division offices; how many of those are there?

General CHORPENING. We have 10 included in the presentation here.

STAFFING OF DIVISIONS

Mr. DAVIS. Generally speaking of the functions of these various division offices, they are the same, are they not?

General CHORPENING. Yes.

Mr. DAVIS. There appears to be a very large variation in the personnel of these various division offices. For instance, the civilian employees and the administrative staff appears to range from 7 in the southern Atlantic division up to 42 in the lower Mississippi Valley. Is there some particular reason for that?

General CHORPENING. Yes. I touched upon that slightly a little earlier. I will elaborate on it a little more. We, from the Chief's office, establish by order and regulations, generally the organization of the division; that is, the way they are divided up and set up in the office. However, each division office does vary somewhat from the standard pattern.

Furthermore, the kind of workload that exists in each division will have some impact on the number that would be in the various parts of

the division office. In other words, the division office, such as the North Pacific, with large multiple projects, where tremendous appropriations are coming up each year, will have a much different situation than, we will say, the lower Mississippi Valley, where there are smaller items, quite a number of which involve hired labor; that is true up and down the river.

Now, between the flexibility of organization, such as I explained, and the difference in workload, and how its requirements are occasioned, there is bound to be a considerable variation in the number of personnel of different parts of the division office.

However, I do not mean to say that we are completely satisfied that the figures in front of the chairman now—they are the correct figures—but I do not mean to say that there might not be some changes, some administrative and supervisory changes, and that goes back to my statement that since we have had the general expenses account that we on our part, are looking into the matter of field organization more, and we are going to continue to do that. I do feel that within the remainder of this fiscal year and in the next year, we will continue to closely check up on these divisions, to see if, in fact, they are realistic as they should exist. I believe that we will be able to fully substantiate the variations that exist in them.

I am not prepared, nor are my people prepared, to give you the detailed reasons now on these individual variations. Those are matters that I have discussed some with my successor, General Itschner and we do want to go into them more thoroughly in the coming months.

Mr. DAVIS. Generally, of course, we on the committee have no way of obtaining the knowledge that you would have with respect to these specific instances, but it does appear, just looking at the overall, taking the lower Mississippi Valley, the Missouri River, and the Ohio River, and the southwestern and the North Atlantic division, are certainly in the upper brackets with respect to the personnel and those might be the ones where survey might prove more profitable.

General CHORPENING. Quite a bit of the cut that we have in the appropriation before you, is going to fall on the divisions this year.

In allocating funds, we are going to have to go into this very thoroughly to be sure that we are spreading the funds properly and in accordance with the workload, and the funds, and to be sure that the number of personnel indicated is required.

Mr. RILEY. General, these division offices supervise both the civilian and the military works in their division, do they not?

General CHORPENING. Yes, except in the lower Mississippi and the upper Mississippi Valley Divisions, which have no military construction responsibility.

Mr. RILEY. The funds that you are asking for today refer to just civil function programs?

General CHORPENING. That is correct.

Mr. RILEY. Where do the funds come from to cover the military personnel?

General CHORPENING. They come from the funds appropriated for military construction.

Mr. RILEY. Each division office then has to keep some division within itself as to the personnel and the work which is being done there?

General CHORPENING. That is correct.

Mr. RILEY. The employees would be interchangeable, would they?

General CHORPENING. Yes; and it is very desirable that the employees are interchangeable, and interchange is frequently made as between civil and military. That, of course, is one of the great strengths of our organization, that where we shift functions, we have trained people who can be placed on military construction as needs be, at any moment. The amount of military construction, in the military program, of course, has, in the last number of years, been greatly expanded, and the key people came from the civil activities.

Now, as that work drops off, of course, we are again dropping them back into the civil functions, and as that drops off we are going to have to make some layoffs; that goes back to what I mentioned a few moments ago off the record.

Mr. RILEY. How many different divisions including division offices handling the overseas assignment?

General CHORPENING. We have 13 divisions, 11 divisions in the continental United States that handle work in the United States; and 2 that handle strictly military construction. One of those two that handles only military construction is located in continental United States and the other in North Africa.

STUDENT OFFICER PROGRAM

Mr. DAVIS. Under the head, "General expenses," it does not appear you have a separate item for student officer program, but I believe you told us last year you planned to have about 75 employees. What actually materialized on that?

General CHORPENING. We had no fund requested here for student officer program. That will be handled entirely from the military funds.

REVIEW BOARDS

RIVER AND HARBOR BOARD

Mr. DAVIS. Under "Review boards," first, for our River and Harbor Board, we have a request before us of $430,000. I believe the committee members are fairly familiar with the functions of this organization. We will insert in the record the tabulation which I have previously been provided, showing the man-years and obligations for the past several years.

(The matter referred to follows:)

Board of Engineers for River and Harbor

Fiscal year	Man-years worked	Obligations
1947	99.4	$516,844
1948	123.9	648,394
1949	149.5	802,751
1950	143.4	841,105
1951	135.9	787,193
1952	69.4	479,413
1953	64.2	450,398
1954 (estimated)	64.0	488,464
1955 (estimated)	61.0	430,000

Mr. DAVIS. Is there anything unusual that has characterized the work of this Board in the past year?

General CHORPENING. Colonel Faulkner, do you have any comment to make in answer to that question?

Colonel FAULKNER. I would like to comment, Mr. Chairman, that in addition to the normal statutory functions set up by the Rivers and Harbors Act of 1902 for the review of all rivers and harbors and flood control, added by the 1938 Flood Control Act, the Board staff performs certain functions for the Chief of Engineers. In the past year the Chief of Engineers has used the Board's staff in policy research to assist in long-range studies of policy and procedures, which we coordinate with the Assistant Chief of Engineers for Civil Works, the final say being in General Chorpening's office. That is an additional function that has been added this year.

General CHORPENING. Other than that, the work of the Board has been quite fully described to this committee in the years past.

Mr. DAVIS. This is a seven-man Board?

Colonel FAULKNER. There are seven senior officers of the Corps of Engineers on the Board. I am a member of the Board and also the full-time working member and as officer in charge of the staff. We have some 89 civilian assistants, economists, and engineers on the staff.

BEACH EROSION BOARD

Mr. DAVIS. The second review board is that of the Beach Erosion Board. We have had considerable discussion of this organization earlier in these hearings and a year ago some of us had an opportunity to visit the establishment of the Board to see some of the work that has been going on and at that time the outside—I believe what you called a pool or a test tank had not been completed.

Colonel FAULKNER. The wave tank had not been.

Mr. DAVIS. Or the test had not been completed, but I assume it is complete and in operation now?

General CHORPENING. The 635-foot outdoor tank to which you refer has been completed except for final installation of the 6-foot wave machine. It has been in limited operation with a smaller wave machine since last summer. It is planned to be in full operation with the large wave machine by September of 1954.

Mr. DAVIS. This is purely what you might call a laboratory operation requiring no supervisory work in connection with the actual program?

General CHORPENING. That is correct. This is a staff of the Beach Erosion Board here in Washington. They function in connection with cooperative surveys of other works that we have here in the same fashion that the staff that Colonel Faulkner mentioned on Rivers and Harbors Board. It is a very small but highly trained technical staff required to perform its function.

Mr. DAVIS. The Beach Erosion Board has how many members?

General CHORPENING. It has seven members. As I recall, 3 of them are civilians and 4 are military.

Mr. DAVIS. How many employees do they have besides their membership at the present time?

General CHORPENING. Nineteen man-years are provided in the funds requested here.

Mr. HAND. How do the funds requested compare with funds that were requested during the last fiscal year for this operation?

General CHORPENING. In the fiscal year 1954 appropriation under "General expense," there were $120,401 allocated to the same operations, which included some carryover.

I want to correct that statement. In the current fiscal year, the amount, in "General expenses fund," which is comparable to the $110,000, is $108,000. In other words, the difference between that fund and the earlier figure I gave you was carryover money which we had available. Now, this year under "General expenses," there will be no carryover because these funds revert if not expended.

REGULATORY BODIES

Mr. DAVIS. We come then to three regulatory bodies, the California Debris Commission for the regulation of hydraulic mining on the Sacramento and San Joaquin Rivers, the justification statement appearing on page 743, with the request for $8,000; second, for the prevention of illegal deposits in New York Harbor with the statement of justification appearing on page 744, with the request for $250,000; and the third, miscellaneous inspection, issuance of permits and so on, outlined on page 745, with the request before us of $630,000. These three pages will be inserted in the record in explanation of this work.

(The statements referred to follow:)

3. REGULATION

(A) REGULATION OF HYDRAULIC MINING ON SACRAMENTO AND SAN JOAQUIN RIVERS (CALIFORNIA DEBRIS COMMISSION)

The act of March 1, 1893, provided for the creation of the California Debris Commission. The project provides for regulating hydraulic mining operations, planning the improvement of conditions upon the Sacramento and San Joaquin Rivers and their tributaries affected by such operations, and the preparation of plans to enable hydraulic mining to be resumed in their drainage areas. On application by prospective miners, full investigation is made by the California Debris Commission, and permits to operate are issued to those who provide satisfactory debris restraining basins by construction of suitable dams where necessary or use Government-constructed debris-restraining reservoirs. An estimate of $8,000 is submitted for such work during the fiscal year 1955.

(B) PREVENTION OF ILLEGAL DEPOSITS IN NEW YORK HARBOR

The laws enacted for the preservation of the tidal waters of New Hork Harbor, its adjacent or tributary waters, and the waters of Long Island Sound, are administered by the supervisor of New York Harbor, who is the district engineer at New York. The supervisor is charged, under the laws, with the duties of preventing any obstructive or injurious deposits in the channels of the harbor by deep-draft vessels.

The work was authorized by act of June 29, 1888. Supervision is exercised by means of inspectors and patrols, with salaries and wages representing the major cost of the work, the remainder being expended for maintenance and operation of the patrol vessels. An estimate of $250,000 is included for fiscal year 1955. This amount will require a reduction in the degree of control that has been exercised in the past. While such reduction in control in the harbor area may result in deterioration of harbor conditions, a revised plan of control is being developed which should greatly minimize such deterioration.

(C) MISCELLANEOUS INSPECTIONS, ISSUANCE OF PERMITS, HARBOR LINES, ETC.

This activity pertains generally to the essential administration of the laws for the protection and preservation of the navigable waters of the United States. In connection with such administration, this activity is concerned with examinations, issuance, and inspection of permits, the issuance of regulations, examinations and inspections of bridges and bridge plans, the establishment of harbor lines, the establishment and inspection of fish stake limits and necessary investigations such as investigations of reported obstructions and wrecks (not removed), and oil-pollution investigations. During fiscal years 1953 and 1954 the expenses of these activities directly associated with authorized active projects were borne by the projects under the provisions of section 6 of the River and Harbor Act, approved March 3, 1905, and were budgeted for under this appropriation. Funds in the amount of $630,000 for fiscal year 1955 are requested to provide for the entire cost of these activities including those associated with authorized active projects. The estimated cost of this activity in fiscal year 1954 is (1) that provided for under "General expenses": Regulation, in the amount of $389,000 and (2) that charged to active projects which is estimated at $365,000. The amount requested for fiscal year 1955 is believed to be the minimum consistent with the current reduced program which will provide satisfactory results.

Mr. DAVIS. That $8,000 appears to be a standard item; we have been carrying it for several years, have we not?

Colonel POWERS. Yes, sir.

PREVENTION OF ILLEGAL DEPOSITS IN NEW YORK HARBOR

Mr. DAVIS. In the project for the illegal disposal in New York Harbor, we have requests for $250,000. There seems to be a decrease from the amount requested last year. The workload decreased a little bit; has it?

Colonel POWERS. No. The functions of the supervisor of the port of New York are similar to the functions which we carry on throughout the country under the general provisions of the navigation laws.

Studies during the past few months of the actual operations in New York Harbor has indicated we should reduce the operations by approximately one-third, in order to carry out to the same extent the operations under specific law providing for the New York Harbor, as we do similar operations under the general laws. These funds provide actually for a curtailed operation.

MISCELLANEOUS INSPECTIONS

Mr. DAVIS. Briefly, what do you include in miscellaneous inspections, which involves an item of $630,000?

Colonel POWERS. In the miscellaneous inspections are included the issuance of permits, inspection of bridges, investigation of wrecks and obstructions to navigation which are not later removed, investigations with respect to oil pollution and the establishment and adjustment of harbor lines.

General CHORPENING. This is the activity we earlier discussed where we indicated we will make, or we hope, some return to the Federal Government in the way of fees although it will not affect the request for funds.

COMMERCIAL STATISTICS

Mr. DAVIS. On page 746, appears an item of $782,000 for commercial statistics. That item seems to be handled a little bit differently this year than it has in the years past. Will you explain that?

Colonel FAULKNER. Mr. Chairman, I would like to call attention to the fact that this is the first time that this item has appeared as a separate item in the budget. As you will note on page 735, for the fiscal year 1953, the amount shown is only $613,650. At that time the costs incurred in our district offices in the collection of the statistics on commercial vessels, numbers of vessels is not included in the general expense account.

To get a comparable figure, we would have to add approximately $365,000 so that in 1953, the cost would be $978,000 for this function which was reduced in the current year to $870,000 and next year to $782,000.

We are making a major reduction in the cost of that through more efficient operation.

We have established 4 regional offices: 1 in New York, 1 in New Orleans, 1 in San Francisco, and 1 which is now in Detroit, but being moved to Chicago, which compile and codify the collections by the 38 engineer districts. Those districts have the equivalent of about 2 employees, 2 clerks, in each district, to obtain the information from the shippers as to the amount of commerce moved and for each vessel movement, and for the ships moved on the inland waters or ports.

That is codified at the regional offices and the regional reports come to the Board of Engineers for Rivers and Harbors which has technical supervision over the program. We consolidate the reports of the regional offices and produce then part 2 of the report of the Chief of Engineers. That gives us the statistics required by the Corps of Engineers, by the Congress, and by all other Federal agencies, particularly the Department of Commerce, the Customs Bureau, and the Interstate Commerce Commission, as well as the Census Bureau.

The reduction in cost has been accomplished by the installation of machine record units at the regional offices. The big reduction this year resulted from the elimination of the use of machine records at the office of the Chief of Engineers, and having the work formerly done there, done in the regional offices, and making use of the machines. We are constantly checking and reducing the costs and we expect in the coming year to effect, as you can see, a reduction of $88,000. That reduction will be accomplished by consolidating the work being done to the district level and having one district in each division do the work. Each year we are improving on our method of getting the information. This appropriation also covers the issuance of Transportation Line Series. There are three of these volumes published, giving the transportation lines, the vessels, both propelled or nonpropelled using our waterways systems.

These are invaluable to the various port authorities, and to the various transportation lines. They are brought up to date annually, and they include every commercial vessel in the United States. We have this one for the Atlantic coast, the Pacific coast, and we have another one for the Great Lakes and one for the inland waterways.

Mr. DAVIS. Do you make a charge for those publications?

Colonel POWERS. Yes, sir, to the public. However, 400 are produced by the Corps of Engineers. Their cost is in this appropriation. They are distributed to Federal agencies throughout the Government. The Maritime Administration has a great deal of use for this information.

Mr. DAVIS. They are available for commercial purposes?

Colonel POWERS. They are available at the Superintendent of Documents; I think the cost is $4.50.

MISCELLANEOUS INVESTIGATIONS

Mr. DAVIS. Under miscellaneous investigations, there is an item of $100,000 as set forth on page 747 of the justifications.

Generally, what do you include in the term "Miscellaneous investigations"?

Colonel POWERS. Miscellaneous investigations cover any number of studies and reports, inspections that must be accomplished, for general purposes or for other Federal agencies. They are not a part of current projects, but are rather general in nature, cover several projects, or are specific in nature with respect to some inactive projects, or locality where no project exists.

Mr. DAVIS. Last year you had $225,000 for this?

Colonel POWERS. We had available $225,000, yes, sir. Actually available for obligations, $225,403. The reduction just indicates an additional reduction in scope of activities.

Mr. RABAUT. Did they spend all of the money last year?

Colonel POWERS. There was $79,000 unobligated at the close of the last fiscal year, 1953.

General CHORPENING. As you know, this year these funds in general expenses revert if they are not spent.

REPLACEMENT OF MOTOR VEHICLES

Mr. DAVIS. Under tab 11, beginning at page 829, there are four pages which deal with the matter of vehicles and aircraft of the corps. We will insert page 831 and 832 in the record at this point.

	1953	1954	1955
Automobiles: [1]			
Inventory at start of year	1,718	1,569	1,371
Number of additions (not for replacement)			
Number disposed of but not replaced	149	198	61
Number of replacements: [2]			
Within both age and mileage standards	6	6	15
Within mileage standard but not within age standard	95	168	138
Within age standard but not within mileage standard	87	76	92
Not within either standard	[3] 12	0	[4] 5
Inventory at end of year [5]	1,569	1,371	1,310
Trucks—Standard body 1½ tons or less: [6]			
Inventory at start of year	2,198	2,096	1,894
Number of additions (not for replacement)			
Number disposed of but not replaced	102	202	6
Number of replacements:			
Within both age and mileage standards	30	14	4
Within mileage standard but not within age standard	99	205	212
Within age standard but not within mileage standard	83	126	186
Not within either standard	[7] 7	[8] 16	0
Inventory at end of year [5]	2,096	1,894	1,888

[1] During the current year, 541 passenger vehicles will qualify for replacement. The number of replacements authorized is 250. Because of curtailed field activities and increased utilization, the size of the fleet will be reduced by 198 vehicles, and 93 overage or excess-mileage vehicles will be continued in operation.

[2] During the budget year, 399 passenger vehicles are expected to qualify for replacement. The size of the fleet will probably be reduced by disposing of the 61 vehicles, and 88 overage or excess mileage vehicles will be continued in operation, leaving 250 to be replaced.

[3] 6 wrecked beyond economical repair; 6 unserviceable due to intensive use under severe conditions.

[4] 5 unserviceable due to intensive use under severe conditions.

[5] Includes those on order.

[6] Includes all 4 by 2 trucks (4-wheel, with 2 driving wheels) of nominal 1½-ton capacity (14,000 pounds gross vehicle weight) or less, when provided with a body (designed by truck chassis manufacturers as standard equipment for that chassis) of any of the following types: Carryall suburban, standard pickup or express, panel, van, open van, platform, stake, or rack body.

[7] 4 wrecked and beyond economic repair. 1 uneconomically repairable due to intensive use under severe conditions.

[8] 16 pickups uneconomically repairable due to intensive use under severe conditions.

INVENTORY OF MOTOR VEHICLES

Mr. DAVIS. Last year the report directed that the number of passenger motor vehicles held by the Corps of Engineers as of December 31, 1952, shall be reduced by 100. Do your records show the number you have on December 31, 1952?

Colonel POWERS. Yes, sir. The inventory as of December 31, 1952 was 1,643.

Mr. DAVIS. What was the inventory on December 31, 1953?

Colonel POWERS. By last June 30, 1953, a reduction of 74 had been accomplished. It is expected that the required reduction will be accomplished by the end of fiscal year 1954 and the balance on June 30, 1954, will be 1,371 vehicles.

Mr. DAVIS. You contemplate a further reduction by the end of the 1955 fiscal year, do you?

Colonel POWERS. Yes, sir.

Mr. DAVIS. What is your best estimate of the figure at that time?

Colonel POWERS. 1,310 vehicles.

Mr. DAVIS. The most of these vehicles are for replacement only. What kind of standard do you use for the replacement of vehicles generally?

Colonel POWERS. There are three types as shown in the budget—age standards, mileage standards, and an uneconomical-to-repair standard.

I might point out the note on page 832 is an error. It reads 343 vehicles which will qualify for replacement. The figure should be 541 vehicles.

Mr. DAVIS. And you actually have requested the replacement of how many?

Colonel POWERS. 250 vehicles.

General CHORPENING. We think we have a very good program for the better utilization of our motor vehicles. We have over the past several years done a great amount of supervisory work in that area, not only to insure that we did not have more vehicles than we need, but that we are making the best utilization of those that we have.

AIRCRAFT

Mr. DAVIS. I note you do not anticipate purchasing any new aircraft during the fiscal year, but you do have an item of $300,000 for maintenance and operation of existing aircraft.

Where are the four aircraft located that you have?

General CHORPENING. We have one aircraft based on Richmond, which is basically used by the Chief of Engineers and his office; we have another aircraft in the Missouri River division, basically used by the division engineer and his office; we have another in the Southwestern division, based on Dallas, used by the division engineer and his district and people. The fourth one is based on Vicksburg for the use of the president of the Mississippi River Commission, the division engineer of the lower Mississippi Valley, and similarly used in his division.

Mr. DAVIS. What type of planes are they?

General CHORPENING. Three of those planes are the C–47, Douglas DC–3, two-engine aircraft, modified somewhat for our own particular

needs in the way of adequate windows so as to give the maximum view for air inspection.

The fourth one which is in the lower Mississippi Valley division is an amphibian which is peculiarly needed in that division because of the desirability frequently of landing on water.

Mr. DAVIS. I believe, General Chorpening, this winds up your testimony before this subcommittee.

I know I speak for all of the members of the committee when I say we have appreciated your efforts in presenting the facts with respect to the work of the Corps of Engineers that comes within the cognizance of this committee. We have come to appreciate your work not only as a professional engineer and officer of the corps. I know that the genuine respect and good wishes and affection of every member of this subcommittee will go with you as you undertake your new assignment.

General CHORPENING. Thank you very much, Mr. Chairman. I can say that I have very much appreciated and enjoyed the opportunity I have had to sit here on this side of the table with this committee, and my associations both personally and officially have been of the finest.

I do not know just where I am going, but I would like to hope that this subcommittee in this work or its other work on the military side may find it necessary to visit wherever I may be. I look forward to that opportunity.

I do want to say this, too. I appreciate the very fine remarks and, if they are true, they are true because I have had behind me as loyal and hard working a staff of officers and civilians as any man can have and to them goes the credit for making available to me and reminding me of what needs to be presented here. They are a hard-working group of gentlemen and I am sure you all do appreciate the tremendous amount of effort that goes into making a proper presentation here.

Thank you all very much.

Mr. RABAUT. Mr. Chairman, I want to say that for anyone to receive the praise of our chairman deserves it. And I want to say, further than that, anyone who could sit here on what we call the "hot seat" and say he enjoys it, certainly must be familiar with the subject.

I feel as the chairman does about it, that we have had a fine presentation by your department, and I congratulate you and your staff.

Fish and Wildlife Service

WITNESSES

O. L. MEEHEAN, CHIEF, BRANCH OF GAME, FISH, AND HATCHERIES
WILLIAM HAGEN, JR., CHIEF, SECTION OF SALMON PROPAGATION

Lower Columbia River Fisheries Development Program

Mr. Davis. Dr. Meehean and Mr. Hagen, we are glad to have you back with us again. I understand that you are here to explain to us 2 items, one of them the lower Columbia River fisheries development program, for which we have before us a request for $1,360,000, and the other in the amount of $1,040,000, for transfer to the Fish and Wildlife Service. We will insert in the record pages 693, 694, and 695, and 730 of justifications at this point.

(Statements referred to follow:)

Summarized financial data

	Amount	Accumulated total percentage of estimated Federal costs
Total estimated Federal cost	$22,110,700	
Total appropriation to June 30, 1953	8,691,400	
Appropriation for fiscal year 1954	1,750,000	
Total appropriations to date	10,441,400	47
Appropriation requested for fiscal year 1955	1,360,000	53
Balance to complete after fiscal year 1955	10,309,300	

JUSTIFICATION OF ESTIMATE

Authorization

Act approved May 11, 1938 (52 Stat. 345) as amended by the act of August 8, 1946 (60 Stat. 932).

Location and description

Hatcheries: Renovation and enlargement of 8 existing hatcheries, plus construction of 20 new stations and 1 laboratory.

Location: Thirteen in the State of Oregon and fifteen in the State of Washington, all on tributaries to the lower Columbia River.

Stream improvement: A comprehensive program of stream clearance to make additional miles of streambed available for natural spawning; laddering hitherto impassable barriers in the streams to provide access for salmon and steelhead to their upper reaches; and installing a system of screens along those streams whose waters are utilized for irrigation or hydroelectric generation.

Location: All those streams located within the Columbia Basin which are suitable for the propagation of anadromous fish.

Facilities for project appraisal; biological and planning surveys: Necessary investigations and surveys prior to construction to determine feasibility and suitability of proposed locations. Construction of devices for measuring annual returns and progress made under the program.

Scheduled completion date.—Dependent upon provision of funds as requested, the final hatchery will be completed; final units of the stream-improvement program will be operating; and facilities for project appraisal will be in place by June of 1957.

Status.—Hatcheries are 36 percent completed; stream-improvement program, 9 percent; hatchery feed, 100 percent; and facilities for project appraisal, 51 percent.

Justification.—The development of the tremendous power potential of the Columbia River as well as the control of floods and the needs of irrigation and navigation, have resulted in a program of construction of major dams. These structures have blocked and impeded the access of salmon and steelhead to their spawning areas. Additional dams will further reduce productivity and endanger the commercial, sport, and Indian subsistence fishery for these species, valued at approximately $20 million annually. To counteract, insofar as possible, the expected damage to this resource, the Fish and Wildlife Service, in cooperation with the States of Idaho, Oregon, and Washington, prepared a program for the maximum production of salmon and steelhead in the streams tributary to the lower Columbia River. The program includes the clearance of obstructions from streams to permit passage of fish, the construction of fishways over waterfalls, and the construction of hatcheries and other facilities for the protection and development of salmon and steelhead.

By State laws, important tributaries to the lower Columbia River in the States of Washington and Oregon have been set aside as fish sanctuaries. Abatement of pollution in these tributary streams and in the main stem of the Columbia is progressing satisfactorily. Actions looking toward increased utilization and corresponding production of salmon and steelhead in the streams protected by law and in those where pollution is being abated await the receipt of additional appropriations to carry forward the program as originally set out.

Fiscal year 1955: The amount of $1,360,000 is required to accomplish the following: Construction of 3 hatcheries; planning and design in connection with 3 additional hatcheries, fishways and screening projects; construction of numerous fish-counting and trapping devices; and administration and supervision of the program.

4. LOWER COLUMBIA RIVER FISHERIES DEVELOPMENT PROGRAM (TRANSFER TO FISH AND WILDLIFE SERVICE)

The coordinated plan of development of the Columbia River fisheries, by the States of Washington and Oregon and the United States Fish and Wildlife Service, consists of stream improvements, construction and operation of hatcheries and facilities related thereto, and transplanting of salmon runs to establish and maintain runs of fish in improved waters.

The operation and maintenance of fish hatcheries, fish ladders, fish screens, project-evaluation facilities, and the continued maintenance of cleared streams are current and continuing requirements of the fisheries-development program, and are essential to maximum fish production. Funds in the amount of $1,040,000 are required in fiscal year 1955 to continue the operation and maintenance of previously completed works and to provide for the operation of new facilities being completed in fiscal years 1954 and 1955.

GENERAL STATEMENT

Mr. DAVIS. We will ask you to bring us up to date on the program; that is, any new developments, since we had the pleasure of hearing you last year.

Dr. MEEHEAN. I would like to present this brief opening statement.

The waters of the Columbia River system have been utilized by man for irrigation and power from the early 1800's to the present time. During the past 25 years this utilization has been most intensive. Main river dams have been constructed and many more are planned, while the construction of lesser projects on the smaller tributaries continues.

The salmon produced in the Columbia River always have been very important to the economy of the Northwest. The Indians were dependent upon the resource for food and barter—you probably saw some Indians when you were down there—as were the early settlers. The salmon industry has grown to its present size because of the continued reproduction of salmon in the spawning areas of the watershed. The production of salmon in the Columbia River is not only

important to the industry on the river but also contributes materially to the offshore fisheries of the Pacific Coast States, Canada, and Alaska.

We did not have too much tangible evidence of this until the last 2 years. There has been an intensive tagging program by the 3 Pacific Coast States, and these tags are revealing migration patterns.

The construction of large dams in the Columbia River watershed has stopped the upstream migration of adult salmon to hundreds of miles of spawning area, and has greatly reduced the stream mileage available for the rearing of young salmon. Other Federal dams have limited the availability of similar areas. In the aggregate, 60 percent of the watershed has been cut off by impassable dams, while an additional 29 percent is only partially accessible to salmon. Additional dams in the main river and in the principal tributaries will make even more difficult the upstream and downstream migrations and the reproduction of salmon. Although fish ladders may be provided in the various structures, there will be delay in the passage of adult salmon upstream, which may result in failure to spawn or result in ineffectual spawning of some portions of the runs, and a mortality of downstream migrants.

The States of Oregon, Idaho, and Washington, and the Fish and Wildlife Service, recognized the damage done to the fishing resource by large dams and anticipated more serious effects to result from the construction of additional dams. The Columbia River fisheries program resulted, which has as its objective the development to the maximum of the salmon-producing potential of streams tributary to the lower Columbia River—generally below McNary Dam, although other streams, such as the Yakima may be important in the preservation of the resource.

The fisheries program has resulted in the clearance of obstructions from streams to permit access of salmon to spawning areas from which they have been wholly or partially blocked. Since initiation of the program in 1949 about 950 miles of streams have been made accessible to salmon and steelhead trout. This has been accomplished by the removal of literally thousands of small and large log and debris jams, the removal of logging dams, completion of about 20 fishways, and blasting low waterfalls. At the same time hatcheries being constructed under this program in 1953, produced 56 million fry and fingerling salmon.

Improved conditions and facilities in the streams of the lower Columbia River watershed as a result of fisheries program activities have increased salmon production, although statistics will not be available for several years to assess fully the program achievements. Observations indicate increased numbers and greater dispersal of adult spawners, and increased numbers of fingerlings in the streams. For example, improvements at the lower falls on the Klickitat River made available 54 miles of new spawning area into which several thousand adult silver and fall chinook salmon migrated. These species were never known to pass the falls previously. Similar utilization of newly available areas have been observed in other streams where the construction of small fishways resulted in increased runs of silver salmon and steelhead trout.

We believe it appropriate to mention that the original concept of measures to preserve the valuable fishery of the Columbia River as

outlined in appendix P of the Corps of Engineers' 308 Review Report included not only the lower river fisheries program; the upriver runs of salmon, which are the most desirable individually, were to be maintained insofar as possible by the inclusion of fishways in dams that would obstruct major runs of fish. Every effort was to be made to preserve runs throughout the upper Columbia and in the Snake. It was recognized that specific action such as the transplantation of runs or the operation of hatcheries might be required at individual dams. For example, a dam or dams in Hells Canyon would block a segment of the runs and create local fisheries problems. These fish were proposed to be transferred to the Clearwater River or to be handled by hatcheries or other means. This would be a project apart from the remedial measures to be taken under the lower river program but, nevertheless, would be closely allied and would increase its effectiveness. In like manner, the Yakima River, if adequate flows for fish were assured, could be an important fish producer. Priest Rapids and Rocky Reach Dams in the Columbia, as well as Ice Harbor and other dams in the Snake, will present special local problems of fish preservation that must be dealt with at the appropriate time.

All of these future problems should be considered along with those of the lower river fisheries program. In the aggregate, they comprise the fishery problem of the Columbia River, and the picture becomes more complex as emphasis is placed on the construction of dams not previously advocated.

I just wanted to give you that background so that you would know what our thinking shows.

SALMON INDUSTRY

Mr. DAVIS. So far as you have been able to observe, what has been the trend of the salmon industry in the period since we started the construction of the large multipurpose dams on the Columbia River?

Dr. MEEHEAN. Starting how far back; about the Bonneville time?

Mr. DAVIS. Yes, about that time.

Dr. MEEHEAN. The report of the biologists indicates that the average level of salmon production is about the same. There has been some change in species but on the whole the runs have been maintained up until this year. There was a rather drastic drop in the run of Chinook last fall. But the blueback run was exceptionally high.

Mr. DAVIS. Have you reached any conclusion with respect to this rather sharp reduction in the fall run of the Chinook?

Dr. MEEHEAN. No; it is a hard thing to establish. The history of fisheries indicate that there may be drastic reductions or increases that we do not understand. For example, the experience in Alaska this year, where the run dropped off very materially, the prediction had been for a good run. Something happened out in the ocean that we do not know about. The Columbia River also has its ups and downs over a period of time, so that unless this run stays down for a period of years, I do not think there is anything to be alarmed about.

STATUS OF FUNDS

Mr. DAVIS. Getting down specifically to the $1,360,000 request, what is the status of your funds for this fishery development program as of your latest estimate?

Dr. MEEHEAN. As of January 31, we have the status-of-funds report. Copies are available for the members of the committee.

Mr. DAVIS. Thank you. It may be inserted into the record.

(The statement referred to follows:)

LOWER COLUMBIA RIVER FISHERIES DEVELOPMENT PROGRAM

Status of funds

Agency	Appropriated 1949–54 [1]	As of Jan. 31, 1954				
		Expended	Obligated (contracts) [2]	Total	Percent of appropriation	Unobligated balance
Construction:						
Fish and Wildlife Service	$3,822,300	$2,666,900	$74,500	$2,741,400	71.7	$1,080,900
Oregon	3,042,000	1,478,300	392,600	1,870,900	61.5	1,171,100
Washington	3,577,100	2,148,000	813,200	2,961,200	82.7	615,900
Total	10,441,400	6,293,200	1,280,300	7,573,500	72.5	2,867,900
Operation and maintenance:						
Fish and Wildlife Service	690,000	485,200	55,000	540,200	78.2	149,800
Oregon	308,200	227,000	81,200	308,200	100.0	
Washington	407,900	241,100	166,800	407,900	100.0	
Reserve	134,600					134,600
Total	1,540,700	953,300	303,000	1,256,300	81.5	284,400
Total, construction, operation, and maintenance: [3]						
Fish and Wildlife Service	4,532,800	3,152,100	129,500	3,281,600	72.3	1,251,200
Oregon	3,434,000	1,705,300	473,800	2,179,100	63.4	1,254,900
Washington	4,015,300	2,389,100	980,000	3,369,100	83.9	646,200
Total	11,982,100	7,246,500	1,583,300	8,829,800	73.6	3,152,300

[1] Includes (FWS) $175,000 budgetary reserve for savings; does not include $102,000 for river basin studies.
[2] Includes contracts with participating States.
[3] Operation and maintenance reserve distributed to agencies.

Estimated status of funds as of June 30, 1954

Agency	Expended and obligated	Percent of appropriations	Unobligated balance
Construction:			
Fish and Wildlife Service	$3,579,000	93.6	$249,300
Oregon	2,732,400	89.9	309,600
Washington	3,577,600	100.0	
Total	9,889,000	94.6	558,900

Proposed allocation of fiscal year 1955 construction budget request—Summary, 1955 detail

	Fish and Wildlife Service	Oregon	Washington	Total
Construction:				
Hatcheries	$31,400	$378,123	$759,250	$1,168,775
Stream improvement	11,260	106,117		117,377
Facilities for project appraisal	17,375			17,375
Administration and inspection	56,473			56,473
Total	116,508	484,242	759,250	1,360,000

Construction, Fish and Wildlife Service, 1955 detail

Hatcheries:	
Spirit Lake (5 percent) [1]	$23,900
German Creek (5 percent) [1]	7,500
Subtotal	31,400
Stream improvement:	
Cazadero Dam Fishway (5 percent) [1]	11,260
Facilities for project appraisal	17,375
Administration and inspection	56,473
Subtotal	85,108
Total	116,508

[1] Indicates new start. No funds previously allotted either for design or construction.

Construction, State of Oregon, 1955 detail

Hatcheries:	
Ox Bow	$26,000
Cascade	352,125
Subtotal	378,125
Stream improvement:	
Stream clearance	19,000
Screening:	
John Day	62,117
Willamette Falls (3½ percent) [1]	17,500
Clackamas River (2½ percent) [1]	7,500
Subtotal	106,117
Total	484,242

[1] Indicates new start. No funds previously allotted either for design or construction.

Construction, State of Washington, 1955 detail

Hatcheries:	
Washougal	$398,000
New Kalama (5 percent) [1]	38,250
Skamania (game department)	323,000
Total	759,250

[1] Indicates new start. No funds previously allotted either for design or construction.

UNOBLIGATED BALANCE

Dr. MEEHEAN. At the top of the page, for construction items, the amount appropriated between 1949 and 1954, includes the $175,000 in reserve savings for this year, but does not include $102,000 appropriated for basin studies. The total expenditure is $6,293,200.

The obligations for construction, including contracts with the participating States, amounts to $1,280,000. The total of $7,573,000 for obligations and expenditures, represents 72.5 percent of the appropriations to date.

At the bottom of the page you will note the anticipated expenditures as of June 30, 1954. From now until that date we will enter into the maximum of construction activity.

The estimate as of June 30 indicates about 94.6 percent will be obligated.

Mr. DAVIS. Where can we trace this $1,750,000 that was appropriated last year for the current year; does that show up in this statement?

Dr. MEEHEAN. No, I do not think it does.

Mr. HAGEN. The $1,750,000 is not listed separately. It is included, however, in the total of the appropriations.

Mr. DAVIS. What is the basis for the substantial unobligated balance as of the end of the current fiscal year?

Dr. MEEHEAN. There are at least two causes: One is the delay in obtaining land. That item is a hard one to predict, that is, the length of time between the appropriation and land acquisition. The other was the fact that the money has not been previously appropriated for engineering and surveys on these projects before the actual appropriation for construction. For that reason, the engineering would have to be accomplished after the appropriation was made and the land actually purchased. That results in a delay of from 12 and, in some cases, 18 or more months.

Mr. DAVIS. What is the arrangement that you have with the States of Oregon and Washington with respect to the funding of this entire program?

Dr. MEEHEAN. We make a regular contract with the States as we would contract with a private company. The cooperative work with the States is undertaken after plans are approved and prior to the undertaking of the contract. During the period of construction inspections are made by our inspectors of the work of the contractor to see that he is complying with the specifications of the contract.

The States may receive payment for segments of projects completed under contracts.

Mr. DAVIS. I notice under the head of "Construction," you have carried it forward in three parts; first, "Fish and Wildlife Service, $3.8 million; Oregon, $3.0 million; and Washington, $3.5 million."

Dr. MEEHEAN. Yes, sir; that is due to the fact that when the appropriations are made certain projected items are set up for the individual States and for the Fish and Wildlife Service. We consult with the States and determine priority of projects. The budget is made up on this basis.

COORDINATION WITH STATES

Mr. DAVIS. The money all comes from the same source, but in some cases the Fish and Wildlife Service is the construction agency; and in other cases the State of Washington or Oregon?

Dr. MEEHEAN. That is right.

The State of Washington and the State of Oregon construct their own hatcheries with these funds that are allocated to them, by contract.

We supervise, more or less, the engineering work to see that the design is adequate and that the hatchery will accomplish the objective.

Mr. DAVIS. Basically, what is the criteria that determines whether the Fish and Wildlife Service is going to do the job, or whether the States of Oregon and Washington are going to do the work?

Dr. MEEHEAN. Each of the three agencies has for many years been engaged in limited salmon production and management activities. The Fish and Wildlife Service has operated in quite specific areas of each State. Thus, the areas of responsibility for the fisheries program activities have been apportioned, in general, on this basis. Regardless of such areas of responsibility, however, the sequence of undertaking fisheries program activities is on a basis of priority as to need and benefits to be derived. The construction item for the Fish and Wildlife Service is only about $116,000. The two States will receive much larger amounts, simply because of the fact that their projects are now of a higher priority.

Mr. DAVIS. But the money will all come from this appropriation?

Dr. MEEHEAN. Yes, it will all come from this appropriation.

Mr. DAVIS. As far as this committee is concerned, the amount of the requirement, fundwise, is not going to be determined in any way by us, but how you get along with construction.

Dr. MEEHEAN. That is right. We have a program laid out of priority projects, according to what we feel should be developed, or are more urgent, in order to meet the needs and get the best results at an early date. We and the States are in the process now of reviewing the program again with the idea of revising the priorities; that is, if they are needed.

CONSTRUCTION OF HATCHERIES

Mr. DAVIS. Within the amount of these requests that we have before us that you mention are the following items that you hope to accomplish: One, the construction of three hatcheries. Will you give us the details on that, please?

Dr. MEEHEAN. In the State of Oregon, the Oxbow hatchery will be completed. Additional funds will be required for the Cascade Hatchery.

Mr. DAVIS. Oxbow and Cascade; those are already under construction?

Dr. MEEHEAN. Those are under construction; yes.

Mr. DAVIS. You will complete their construction with the funds herein requested?

Dr. MEEHEAN. These funds will complete the Ox Bow hatchery.

Mr. DAVIS. That is for completion of the project now underway?

Dr. MEEHEAN. Yes.

Mr. DAVIS. And $378,125—is that in Oregon?

Dr. MEEHEAN. That one is in Oregon.

Mr. DAVIS. What do you expect to complete in the State of Washington?

Dr. MEEHEAN. The estimate for the Washougal is $398,000 which has a total estimated cost of $500,000.

Mr. DAVIS. You had some money in the current fiscal year; did you not?

Dr. MEEHEAN. $25,000 which was for engineering plans.

Mr. DAVIS. You do anticipate completing that with funds in 1956?

Dr. MEEHEAN. That is correct. The Skamania Hatchery, which will cost approximately $400,000 has, in this budget, an estimate of $323,000, and last year we had $20,000 for engineering.

On the Cascade Hatchery, back here in Oregon, I was in error. The amount that we have in this budget is $352,125, and we had $25,375 in engineering funds last year. That will carry us over into the next fiscal year, when we will need an additional $130,000. The total estimate is $507,500.

In addition, under this construction program for the Fish and Wildlife Service, we have three items which are new starts to us; that is, engineering, Spirit Lake and German Creek Hatcheries. The Cazadero Dam fishway is a planning item also.

And under the State of Oregon, the screening program on the John Day, for which there is an amount of $62,117, which will permit completion. In addition there is an amount of $17,500 for the Willamette Falls, and $7,700 for the Clackamas River, both for designing of screens.

STREAM CLEARANCE

There is an item for stream clearance of $19,000.

Under the State of Washington——

Mr. RABAUT. What is the percentage figure represented by that?

Dr. MEEHEAN. That is approximately the total cost or 100 percent for stream clearance.

Mr. DAVIS. Percentage of the construction you plan to spend?

Mr. RABAUT. This is the first time we are getting that?

Dr. MEEHEAN. No, sir. This is the final sum for small-stream clearance.

There is an engineering item for planning, in order that if and when appropriations are made, then they can go ahead without undue delay.

There is an item for the new Kalama Hatchery in Washington; 5 percent for engineering plans.

Mr. DAVIS. This $19,000 item in Oregon for stream clearance; will you give us a little more detail with respect to that?

Dr. MEEHEAN. Yes. It is primarily for fisheries stream clearance.

Mr. DAVIS. Can you give us the items making that up?

Dr. MEEHEAN. That is something we cannot itemize. The State of Oregon has been going through these streams that have logjams in them, and dams used by the logging companies and so forth, and cleaning them out. They have practically completed that program and this item of $19,000 is intended to complete it. It is opening up new spawning areas, or spawning areas that have been blocked through logjams, and so forth.

Mr. DAVIS. What do you include in the term "Facilities for project appraisal"?

Dr. MEEHEAN. That includes such things as weirs which we put in the streams in order to count and check the downstream or upstream runs to see how effective the program activities and facilities are developing the salmon runs.

ADMINISTRATION AND INSPECTION

Mr. DAVIS. Under the term "Administration and inspection," what do you include in the $56,473?

Dr. MEEHEAN. That includes the efforts of the engineering staff and other people in the regional office who are working directly with the States on this program. It requires quite a lot of consultation and coordination in designing fishways, the inspection of the construction work after it is underway, to see that it is in conformity with the terms of the contract. In addition there is the usual administrative overhead.

NEED FOR ADDITIONAL HATCHERIES

Mr. DAVIS. Recognizing the significance of your program, what is the basis upon which you made the determination, for instance, that three new hatcheries would be required in this program?

Dr. MEEHEAN. All of these projects were based on biological surveys to determine, for example, where streams could be cleared to open up spawning areas. Hatcheries are located at points where, biologically, the runs can be developed and maintained.

Mr. DAVIS. Spirit Lake has an estimated cost in the neighborhood of a half million dollars?

Dr. MEEHEAN. That is right.

Mr. DAVIS. German Creek is down for something like $150,000?

Dr. MEEHEAN. $157,500. The size of the hatchery of course, depends upon the potential.

Mr. HAGEN. I might point out that German Creek Hatchery will be more seasonal than year-around, operating during the chum salmon run.

Mr. DAVIS. The States of Oregon and Washington do have their own hatcheries and fisheries program, do they not?

Dr. MEEHEAN. That is right. They are spending—and I believe I gave the figures last year—approximately what we are spending in the same area. Their program is on a little different emphasis. For example, they are making an appraisal of the effectiveness of this and other programs, and of management problems. Biologists from British Columbia, Washington, Oregon, and California, have a coordinated project to determine the contributions from the various rivers along the coast to fisheries and to trace the salmon to see how effective various projects are that are involved in the separate rivers.

In addition to that, they are doing considerable research on other phases, such as the damage to fish runs caused by dams.

RESPONSIBILITY FOR REPLACEMENT OF FISH

Mr. DAVIS. This whole program from the Federal Government's standpoint, is based upon the theory that in view of the fact the

Federal Government is building these dams, it has the responsibility to substantially replace the fish resources that are thereby destroyed?

Dr. MEEHEAN. Yes.

Mr. DAVIS. Then every time we build a new dam, we can anticipate a pretty substantial program for hatcheries and facilities, to be built?

Dr. MEEHEAN. Not necessarily. As these dams are built, each project is studied by the Fish and Wildlife Service and the States involved, wherever they are located. They look at both the fish and wildlife aspects to see what the emphasis will have to be. They may or may not recommend any facilities, and on many of these we have not recommended facilities of any kind; that is, in other parts of the country.

We have a map here that shows the effect of some of the dams being built and projected, if you would like to take a look at it.

Mr. DAVIS. Yes, we would like to see it.

Mr. HAGEN. The Columbia Basin amounts to some 259,000 square miles, in which the salmon originally had penetrated clear to the headwaters, some 1,200 miles from the ocean.

Following the construction of the Grand Coulee Dam, and subsequently the Chief Joseph Dam, that area was lost to the salmon [indicating].

Upon the construction of other dams additional area was no longer accessible to salmon. About 60 percent of the watershed lies above impassable dams.

The dams on the Columbia River watershed will add to the difficulty of salmon reaching this presently available area.

In other words, the program of dam construction, if activated, will hinder the salmon in reaching spawning areas in the middle Columbia and the Snake because of the dams over which they will have to climb.

When and if the lower Snake River Dams are built, the area above the dams will be even less available. When and if Hells Canyon or a series of dams are constructed on the Snake River, the development will block off completely some 25,000 to 50,000 salmon.

Regarding the possibility of fishery projects at individual dams, it may be necessary to transfer fish to other streams or salvage the fish by some other means.

Then Priest Rapids Dam is another block, if it is placed.

Mr. HAND. I did not hear your identification of that.

Mr. HAGEN. This is Priest Rapids Dam. And Rocky Reach site, which has been noted in the press, will be located further up in the migration route of salmon and hinder the passage upstream of the blueback salmon to one of the important spawning areas. The Okanagan River [indicating] is the major spawning area of the blueback at the present time.

Mr. HAGEN. Also the dams in the aggregate will affect the runs into the Wenatchee, the Entiat and the Methow Rivers, on which we now have hatcheries constructed to counteract the damage done by Grand Coulee.

This area of the basin below McNary Dam [indicating] is the locale of the lower Columbia River fisheries program. In this area we have the John Day Dam proposed. We have the Cowlitz dams which still are in litigation, although the circuit court of appeals at San

Francisco has made a ruling that the Federal Power Commission does have the right to grant licenses for these dams despite State opposition.

A similar situation exists with regard to the proposed Pelton Dam on the Deschutes River in Oregon. The same problem will be true at the Deschutes Dam. These dams will cut off major spawning areas in the lower Columbia River.

There is what is left of the Columbia Basin that is unobstructed by man at the present time.

The lower river program is in this lower section only [indicating], downstream from McNary Dam. However, you will recall mention of the Yakima River and some other streams that may be developed for salmon production, provided we have the water to make use of the streams.

On the Klickitat River, where the State of Washington has improved entrance conditions, large numbers of Silvers and Chinook salmon have entered the 50 miles of spawning area, whereas they were never known to be able to ascend the stream before.

In the total stream clearance improvement program, there have been some 900 miles of stream area made available for spawning to date.

Mr. HAND. All of this program we are talking about is on the lower Columbia?

Dr. MEEHEAN. Yes, sir.

Mr. HAND. There is no program otherwise.

Dr. MEEHEAN. No, sir, not with this appropriation.

Mr. HAND. Are there any other pending appropriations which have to do with it?

Dr. MEEHEAN. No. In the case of a few of the dams, special funds have been appropriated to make studies of the individual projects.

Mr. HAND. But there is nothing beyond the study stage except in the lower Columbia?

Dr. MEEHEAN. That is correct.

Mr. HAND. This is the whole program presently as far as we are concerned?

Dr. MEEHEAN. Yes, sir.

Mr. HAND. With this $1,360,000 which you are asking this year, you propose to build, among other things, 3 hatcheries?

Dr. MEEHEAN. That is right.

COST OF FISH HATCHERIES

Mr. HAND. How much do those individual hatcheries cost?

Dr. MEEHEAN. Cascade, $507,500; Ox Bow, $440,558; Washougal, $500,000; Skamania, $400,000.

Mr. HAND. Will those individual hatchery costs exceed your total funds requested? Are you using some unobligated funds?

Dr. MEEHEAN. No. We had some engineering funds this year. Some additional funds will be required to build.

Mr. HAGEN. Dr. Meehean gave you the figures of the total overall estimated cost. That is what we thought you asked for.

Mr. HAND. That is not the amount you are doing this year?

Mr. HAGEN. No.

Mr. HAND. What is the general nature and size of a typical hatchery? Take one of your large ones.

Dr. MEEHEAN. A large one will have in the neighborhood of 30 rearing ponds. That is these concrete raceways for rearing fish. It will have some spawning ponds in conjunction with them where the fish run in and are held temporarily and are spawned. It generally includes hatchery building, a service building, food storage and preparation, truck storage, shop facilities, and generally in the neighborhood of 5 or 6 residences, depending on the size of the hatchery and how many personnel we have to have living on the grounds in order to take care of the facilities.

Mr. HAND. They are always remote from any other community, I suppose?

Dr. MEEHEAN. In most cases they are quite remote from any other community; yes. But even though they were not remote, we have to have a certain number of personnel on the grounds, because we have the flowing water; we have heating systems, and various things might happen and somebody has to be there to look after those facilities. We might lose a whole year's work by just a water supply blocking up, for example. This has happened.

TRANSFER OF FUNDS

Mr. HAND. By whom is this money going to be spent? I am a little confused as to whether you supervise, whether the Corps of Engineers do the building, and the relationship of the States to this money.

Dr. MEEHEAN. The money is transferred to the Fish and Wildlife Service.

Mr. HAND. By the Corps of Engineers.

Dr. MEEHEAN. By the Corps of Engineers. The States and the Service get together on an agreed plan for any fiscal year to determine the projects that ought to be constructed with the appropriation. In the case of the States, we make contracts with them for the individual projects which they will undertake, just as we would with a company, and they spend that money under their State contract laws within the State. The Service merely works with them on the designs to see that their designs are adequate for what they are intended to do, and inspects the construction as it goes along to see that the contractor is fulfilling the terms of his contract, and so forth.

Mr. HAND. In effect, we are turning over a direct amount of Federal funds to the States.

Dr. MEEHEAN. That is right.

Mr. HAND. For them to carry on their own construction.

Dr. MEEHEAN. That is right.

Mr. HAND. Is the State of Idaho involved in this?

Dr. MEEHEAN. The State of Idaho is not involved in this, because the program is designed primarily to develop the fisheries resources of this lower river area to the ultimate. Where the State of Idaho could come into it is if an individual project of some kind should be built, for example, on the Snake River in Idaho. There would be fisheries problems involved in such a project.

Mr. HAND. On page 694 of the justifications before us, the language is found:

The Fish and Wildlife Service, in cooperation with the States of Idaho, Oregon, and Washington.

So that there is no cooperation from or with the State of Idaho of that kind?

Dr. MEEHEAN. No. They were merely a party to the original agreement. They have been protecting the salmon that have come up into the State of Idaho to spawn. At the present time, they are making surveys; they have biologists working to determine the extent of the spawning up there and ways and means by which they might improve conditions in their area.

STATES PARTICIPATION

Mr. HAND. In addition to the moneys which the Federal Government gives to those States, they put up a substantial amount of their own; is that correct?

Dr. MEEHEAN. That is right.

Mr. HAND. Who has the ultimate jurisdiction to determine what the State gets—what Oregon gets, what Washington gets and what California gets?

Dr. MEEHEAN. From this appropriation?

Mr. HAND. Yes; the Fish and Wildlife Service.

Dr. MEEHEAN. That is determined by agreement; that is, the total program has been worked out on the basis of priority of projects and, depending on the amount of the appropriation, the projects of highest priority are included in it, so that there is no percentagewise division, but it is based on the priority of the projects.

Mr. HAND. Is it determined by mutual agreement between the United States and the two States involved?

Dr. MEEHEAN. That is right.

Mr. HAND. We do not have ultimate jurisdiction? Suppose you could not come to an agreement, do not you have ultimate jurisdiction to say how much Washington shall get and how much Oregon shall get?

Dr. MEEHEAN. I assume we could use that approach; but, up to the present time, we have always been able to reach an agreement. The States are vitally interested in forwarding this program; consequently they have been very fine about cooperating.

Mr. HAND. Referring to the table appearing on page 785 of volume 1 of last year's hearings, is the proposed expenditure of the $10 million based on the problems you see now, or is it based on the possibility of the construction of additional dams in the Columbia River?

Dr. MEEHEAN. It has no relationship to the additional dams, except insofar as the dams in the aggregate affect the total fishery resource. This program was designed to develop to the ultimate the lower Columbia River area and is a unit in itself.

Mr. HAND. So if we engaged on a program of construction of additional dams, it would be fair to assume we would be faced with the problem of providing additional moneys for fish preservation, insofar as those dams blocked an individual area?

Dr. MEEHEAN. As far as those dams would affect an individual area.

Mr. HAND. Now the thing that has always concerned me about this whole situation, Dr. Meehean, I referred to last year in our hearings, where I said, on page 793:

I want to get myself straightened out, Doctor, on one of the earliest statements you made to see if I understood you correctly, that despite the construction of these various dams and projects in the Northwest, that, generally speaking—and I think you indicated some surprise at it—that the salmon crop had been maintained, the annual crop of salmon was about what it was.

Dr. MEEHEAN. Up to this point.

Mr. HAND. We do not know what the future holds, but up to this point, the annual take in salmon is about constant with what it was prior to these undertakings.

Dr. MEEHEAN. About the same for the last 20 years.

That statement still stands?

Dr. MEEHEAN. Yes.

Mr. HAND. And again on page 794 I ask:

Mr. HAND. Do I understand now above the Grand Coulee there are no more salmon?

Dr. MEEHEAN. Those runs have been cut off entirely.

Mr. HAND. How long has the Grand Coulee served as an effective block to salmon?

Dr. MEEHEAN. About 14 years, sir.

Mr. HAND. Notwithstanding this annual catch, the annual crop is still about the same as it was before the construction of Grand Coulee.

Dr. MEEHEAN. About the same. The only change that has been made is that the species are in different numbers.

That is still correct?

Dr. MEEHEAN. That is still correct.

NECESSITY OF PROJECT

Mr. HAND. The thing that concerns me is that the crop is the same despite the construction of all of those dams on the Columbia River, and I am a little worried about whether there is any real necessity for this $22 million program to preserve the salmon crop under those circumstances.

Dr. MEEHEAN. Yes, there is. When Grand Coulee was constructed, there was quite a large program undertaken at that time to transfer those runs into the rivers Mr. Hagen indicated—the Methow, the Entiat, the Okanogan, and the rivers up in that area below Grand Coulee Dam and we are still operating three hatcheries up in that area as part of that program. Those have served to mitigate the effects of the Grand Coulee Dam.

Mr. HAND. To some extent, then, I suppose the answer is the crop is the same because of the measures you have taken?

Dr. MEEHEAN. That is right.

Mr. HAND. On the other hand, there are other areas beside Grand Coulee in which they do not seem to have reduced very much in numbers.

Dr. MEEHEAN. The only other dams that have been constructed—I mentioned the Bonneville Dam which did not serve as a very serious block, and we have no other dams in the main stem except those that are under construction. Rock Island has been there for many, many years.

Mr. HAND. What dams now under construction are causing you concern so far as the salmon crop is concerned?

Dr. MEEHEAN. McNary and The Dalles.

Mr. HAND. Your program, then, is largely based on the damage they will do?

Dr. MEEHEAN. Yes; In the damage they will do, and possibly other dams. There are authorizations for other dams which maybe will never be constructed, but those will cause damage, also, if they are constructed.

Mr. HAND. But so far as the dams not under construction are concerned, but which are merely planned at this point, this program does not contemplate compensating for any damage they may do; it stands on its own feet and is based on what is constructed now? Is that right?

Dr. MEEHEAN. Not entirely. Certain other dams have been authorized and we have knowledge of them, and it was intended that this program should mitigate, as far as it can, the damages of all of these that we can anticipate so far.

STATES' RESPONSIBILITY

Mr. HAND. The small stream clearance, little tributaries, and so forth—that is done exclusively by the States?

Dr. MEEHEAN. That is done exclusively by the States.

Mr. HAND. And with their own funds?

Dr. MEEHEAN. No.

Mr. HAND. That is done also with our funds?

Dr. MEEHEAN. That is done also with our funds.

Mr. HAND. For what do they spend their money?

Dr. MEEHEAN. They operate a number of hatcheries. They have quite a large staff of biologists who are working on the biological problems connected with the Columbia River and that general area. They have a program that complements what we are doing; that is, they are carrying on their normal activities.

Mr. HAND. That is just the point; so that it does not have anything really to do with this particular program, but is merely carrying on the normal State activities in connection with the conservation of fish?

Dr. MEEHEAN. Their research program is intended to find some of the answers we need in connection with these problems surrounding the construction programs. They are making investigations of ways and means of getting the fish up and down over the dams, studying the patterns of their migration, the physiology of the fish, in order that we may have more information on the subject. That is in addition to what the Service is doing along those lines.

Mr. HAND. What they are doing is analogous, I would suppose, to the activities of other States who have a large interest in fishing. For example, they have a department in my State that we call the department of conservation and economic development, and they have a bureau in that department which has to do with fish. They hire biologists, scientists, and other members of the staff and maintain a continuing research on the problems in their particular area.

What is the State of Washington doing beyond that normal activity?

Dr. MEEHEAN. In the last several years the States of Washington and Oregon have appropriated much larger sums of money to carry on the fisheries activities than they ever had before. For example, the State of Washington spent about $500,000.

Mr. HAGEN. In the present biennium, they have appropriated $3.5 million in the State of Washington.

Dr. MEEHEAN. Both States have stepped up their programs materially.

ANNUAL FISH VALUE

Mr. RABAUT. Moneywise, what is the value of the fish take in this area annually?

Dr. MEEHEAN. Approximately 17 to 19 million dollars.

Mr. RABAUT. So this is a conservation program pure and simple?

Dr. MEEHEAN. That is right. There are certain values that we do not know too much about; that is, some of the offshore fisheries, off British Columbia, Alaska, and places like that, where the fish are migrating up there, they are normally included in the catch of those fisheries, while actually the Columbia River is contributing to those. Those are some of the things difficult to measure.

Mr. RABAUT. Some years ago you had trouble with a great many of the fish being taken in the ocean, such as the sardine. Is that in this group?

Dr. MEEHEAN. No. Those are a different group of fishes. They are a sardinelike species, something related to our shad down in your area, only they are a small fish such as the pilchards, and so forth.

Mr. RABAUT. Is that still going on?

Dr. MEEHEAN. That is still going on. However, there has been a considerable change in the temperatures in the ocean, in the areas where the sardines have been taken, so that the catch off California has dropped off tremendously in the last couple of years.

Mr. RABAUT. You mentioned 2 species of fish and said that one of them would survive if it was transferred to fresh water and locked, for instance, in a fresh-water lake. Which species is that?

Mr. HAGEN. That is the sockeye, or blueback as it is called in the Columbia River.

Mr. RABAUT. Has any attempt ever been made to put that fish in fresh water and see how it would propagate?

Mr. HAGEN. Many times. And it will propagate. It has a normal life cycle of 4 years, but in fresh water they grow to about half the size of the sea-run fish and are only about 1 foot long. They reproduce and die after spawning.

Mr. RABAUT. And they continue on?

Mr. HAGEN. Yes.

Dr. MEEHEAN. Pend Oreille Lake is a familiar case where there are the kokanee. They are a landlocked blueback salmon.

Mr. RABAUT. How does it happen that this species has never been transferred to an area like the Great Lakes?

Mr. HAGEN. The water temperatures may not be suitable for them there. They have, however, been transferred to waters of New England and elsewhere.

Mr. RABAUT. Even the water temperatures of Lake Superior would not be good?

Dr. MEEHEAN. They may be; but there is another factor involved: that is, the biologists of the various States are a little concerned over

putting a new species into an environment, because they do not know what it will do.

Mr. RABAUT. They do not know how it will affect the other fish?

Dr. MEEHEAN. They do not know how it will affect the other fish; they do not know enough about the life histories of the biology of most of these species, for example, in the Great Lakes, to do an intelligent job of transferring a kind of species that might be compatible with the others that are there.

Mr. RABAUT. Have you no proving grounds of any kind where you try out those things?

Dr. MEEHEAN. We have no investigations of that type. The kokanee have been put in a lot of landlocked lakes.

Mr. RABAUT. What about the idea of trying to create such a condition?

Dr. MEEHEAN. It might be tried on a small scale in some isolated instance, to see what it would do.

Mr. HAGEN. In general, the kokanee, or landlocked blueback salmon, is not a desirable commercial fish, or sport species. It is too small and will utilize the spawning areas in streams that might better be used by the native species in that area.

Mr. RABAUT. I am glad you brought that out.

How far can you transport fish for replanting?

Dr. MEEHEAN. We can transfer them around the world.

Mr. RABAUT. How is that done?

Dr. MEEHEAN. In the case of cold-water species, it is done by transferring the eggs. In the case of other species, warm-water species, it would have to be done by the use of small fingerlings placed in the water.

Mr. RABAUT. Transported in cans?

Dr. MEEHEAN. In cans and containers of various kinds. Some who handle tropical fishes are using trucks and enclosing the fish in parafilm bags and transferring them by plane. That is a new development.

Mr. RILEY. You do not have figures on the percentage of salmon that are being spawned in your hatcheries?

Dr. MEEHEAN. We have a rough estimate. Our hatcheries on the lower Columbia River handle roughly 20 percent of the fall Chinook. In the case of the silvers and bluebacks, we do not have that information.

Mr. RILEY. You are making studies, though?

Dr. MEEHEAN. We are making studies. We have studies going on in Okanogan, which is the biggest area left for blueback spawning, and we are coming up with some rather startling results.

OPERATION AND MAINTENANCE

Mr. DAVIS. In connection with your request of $1,040,000, for operation and maintenance, we will insert in the record the proposed allocations of those funds.

(The matter referrred to follows:)

Proposed allocation of operational maintenance funds scheduled in the 1955 budget

SUMMARY

Fish and Wildlife Service:	
Hatcheries: Operation and maintenance of 3 units	$400,830
Appraisal of project results	35,000
Administration and inspection	55,000
Total	490,830
State of Oregon:	
Hatcheries: Operation and maintenance of 4 units	152,400
Stream improvement	28,000
Appraisal of project results	44,500
Total	224,900
State of Washington:	
Hatcheries: Operation and maintenance of 2 units	250,000
Stream improvement	30,000
Appraisal of project results	44,270
Total	324,270
Grand total, operation and maintenance costs, fiscal year 1956	1,040,000

Operation and maintenance detail

FISH AND WILDLIFE SERVICE

Hatcheries:	
Spring Creek	$55,000
Little White Salmon	93,430
Carson	92,400
Willard	100,000
Eagle Creek	60,000
Subtotal	400,830
Appraisal of project results	35,000
Administrative and inspection	55,000
Total	490,830

STATE OF OREGON

Hatcheries:	
Sandy	38,200
Big Creek	30,500
Klaskanine	21,900
Ox Bow	23,400
Bonneville	38,400
Subtotal	152,400
Stream improvement	28,000
Appraisal of project results	44,500
Total	224,900

STATE OF WASHINGTON

Hatcheries:	
Klickitat	92,000
Toutle	80,000
Elokomin	78,000
Subtotal	250,000
Stream improvement	30,000
Appraisal of project results	44,270
Total	324,270
Total operations and maintenance, all regions	1,040,000

Mr. DAVIS. Doctor, will you give us a general statement about the increase in cost from $802,975 last year to $1,040,000 this year?

Dr. MEEHEAN. Very well, sir.

As the facilities of the fisheries program are completed and placed in operation additional operational funds are required. Each year the funds required for operation and maintenance will be greater until all facilities are complete and operations stabilized. Operation of the facilities at full capacity is required if the objectives of the fisheries program are to be achieved.

GENERAL INVESTIGATIONS

Mr. DAVIS. Next comes "General Investigations." The justifications will be inserted in the record at this point.

(The matter referred to follows:)

GENERAL INVESTIGATIONS, CORPS OF ENGINEERS, CIVIL (TRANSFER TO INTERIOR, FISH AND WILDLIFE SERVICE)

2C. FISH AND WILDLIFE STUDIES, $40,000

Justification

These funds will help finance studies by the Fish and Wildlife Service of projects in both the construction and investigation programs of the Corps of Engineers. These funds are for studies of projects throughout the United States (except the Missouri River Basin) and in Alaska. Funds for this work have been carried annually in the civil functions appropriation bills since fiscal year 1949 for transfer to the Service.

The act of August 14, 1946 (60 Stat. 1080) established a national conservation policy and expressed the need for cooperation and coordination on the part of all Federal agencies in the conservation and protection of fish and wildlife. The act requires the Corps of Engineers and other Federal construction agencies to consult with the Fish and Wildlife Service and the State conservation departments with a view to lessening any adverse impacts of Federal water-use projects on fish and wildlife resources. Under this act, the Fish and Wildlife Service has the responsibility of investigating and reporting on all Federal water-use projects, and those requiring Federal license as well, for the purpose of determining their effects on these resources and to devise feasible measures to prevent loss and damage to these resources. The act also requires that the report of the Secretary of the Interior, based on these investigations, and that of the head of the agency in the affected State exercising administration over wildlife, be made an integral part of any report submitted by a Federal construction agency on a water-control project.

Section 2 of the act of August 14, 1946, both contemplates and authorizes transfer of investigation funds since such funds are to be used to conduct the investigations which the act requires be made by the Fish and Wildlife Service.

The Fish and Wildlife Service conducts surveys on areas involved in water development and drainage plans, prepares reports on its findings, and proposes measures designed to lessen harmful effects on fish and wildlife. If it is found that damages to these resources would be substantial, possibilities for modifying the project are pointed out to the construction agency. Recommended measures include minimum releases of water for fish life, installation of fish ladders and screens, partial replacement of wildlife habitat around a reservoir area by tree and shrub planting, and the like. Project plans can often be modified so as to reduce damages to, or increase, these resources with minor cost to the project particularly if project studies can be made beginning in the early planning stages. In all of these activities, the Service works closely with the construction agencies and appropriate State fish and game departments.

Another stipulation of this act is that adequate provision shall be made, consistent with the primary purposes of a project, for making project lands available to the States or the Fish and Wildlife Service for wildlife management purposes. The Service is consistently reviewing water development projects in the light of their possibilities for use in fish and game programs. Each area with favorable potential for management of reservoir resources is discussed with the States and

their interest determined. The Congress and the executive branch have repeatedly indicated their endorsement of the multiple-purpose concept of natural resources development. In the act of August 14, 1946, Congress expressed the view that there should be maximum use of Federal project areas for wildlife management purposes in the public interest.

The average cost of project studies by the Fish and Wildlife Service is only $1,900. This includes an average of $2,500 for larger flood control and multiple purpose project and an average of $1,300 for local flood control and minor navigation projects.

The amount requested for fiscal year 1955 will permit detailed examination of 20 or 25 projects.

Funds made available directly to the Fish and Wildlife Service for river-basin studies are inadequate to carry out detailed studies of corps projects. These funds are utilized for studies of projects proposed by applicants for licenses from the Federal Power Commission, and preliminary examinations of projects proposed by Federal construction agencies and for overhead expenses. The Service will conduct detailed studies of Corps of Engineers projects and make reports, within the limits of funds made available to it, on those projects deemed most important from a fish and wildlife standpoint.

Status of funds.—As of December 31, 1953, $33,595.79 of the $50,000, transferred by the Corps to the Fish and Wildlife Service for use in fiscal year 1954 for investigations, was unexpended and unobligated. There will be no balance as of June 30, 1954.

WEDNESDAY, FEBRUARY 3, 1954.

CANAL ZONE GOVERNMENT
PANAMA CANAL COMPANY

WITNESSES

BRIG. GEN. J. S. SEYBOLD, GOVERNOR OF THE CANAL ZONE, PRESIDENT, PANAMA CANAL COMPANY
W. M. WHITMAN, ASSISTANT TO GOVERNOR OF THE CANAL ZONE, SECRETARY, PANAMA CANAL COMPANY
LINDSLEY H. NOBLE, COMPTROLLER, PANAMA CANAL COMPANY
L. B. MAGNUSON, BUDGET ANALYST, PANAMA CANAL COMPANY
E. A. BACON, ASSISTANT TO SECRETARY OF THE ARMY

Mr. DAVIS. Governor Seybold, we are happy to have you back with us again this morning. I assume there have been a number of things of interest to the committee that have occurred in connection with the operation of the Canal Zone Government and the canal itself in the course of the last year. I know you have prepared something of a summary of that operation, and we will be glad to have your statement at this time.

GENERAL STATEMENT

General SEYBOLD. I have a general statement, Mr. Chairman, that I would like to read, a part of which has been reproduced and furnished members of the committee. In addition to that, I would like also to read a supplementary presentation.

Mr. Chairman and gentlemen of the committee, I am glad to have this opportunity to discuss with your committee the budget program of the Panama Canal Company and the estimates for the Canal Zone Government for fiscal year 1955. All operations of the Panama Canal Company will be financed by the Company out of earnings without

appropriations. Although the Canal Zone Government is requesting an appropriation of $15,203,000, the entire cost of operations of the Canal Zone Government including depreciation will be reimbursed to the Treasury by receipts of the agency and by the Panama Canal Company.

In addition to recovering operating expenses and the cost of Canal Zone Government, the Panama Canal Company pays into the Treasury interest on the investment of the United States in the Company and the annual annuity payment to the Republic of Panama.

By way of background for the 1955 budget we have the actual operating results for fiscal year 1953, the second year of operation after the 1951 reorganization, as well as the results for the first half of fiscal year 1954.

A fact sometimes lost sight of in preoccupation with the secondary problems which have received the most attention since the reorganization is that the basic purpose of the whole operation at the Canal Zone is to move ships through the Canal from one ocean to the other. In fiscal year 1953 more ships were handled than in any other year since the construction of the Canal and the receipts from tolls were the highest in history. During 1953, a total of 10,170 ships passed through the canal producing a tolls revenue of $37,530,000.

INCREASE IN TRAFFIC

During the first half of fiscal year 1954 traffic continued to rise. During that period there were 5,320 transits as compared to 4,856 during the same period in fiscal year 1953 producing a tolls revenue of $19,451,000 as compared with $17,968,000 for the first 6 months of 1953. The unusually high rate of use of the canal in 1953 and in the first half of 1954 was brought about by abnormal conditions in world trade, such as the Korean war, and as indicated later in this statement, a return to a more normal situation is anticipated in fiscal year 1955.

The 1953 record was produced in a year in which the Miraflores and Pedro Miguel locks underwent a complete overhaul—the first in 5 years. Such an overhaul takes one side of the locks out of operation and reduces the capacity of the locks during the overhaul period of approximately 6 months.

NET INCOME

After payment of all costs and expenses of operation, interest on the investment in the amount of $6,668,895, depreciation, costs of Canal Zone Government and other charges provided by law, but without depreciation or amortization of the channel, treaty rights and similar costs heretofore treated as nondepreciable, the Company showed a net income of $7,200,963 for fiscal year 1953.

EFFECT OF ECONOMY AND EFFICIENCY PROGRAMS

Along with the increased workload resulting from the record level of traffic through the canal in 1953, policies and programs initiated by this management in 1952 looking toward economy and increased efficiency of operation began to show some concrete results. For ex-

ample, the total number of employees was reduced from 18,239 at June 30, 1952, to 16,392 at June 30, 1953, a reduction of 1,847. Major internal reorganizations have been effected to consolidate activities of related functions, as for example, the transfer to the Marine Bureau of the Industrial Bureau, the transfer of the Dredging Division to the Engineering and Construction Bureau, and the transfer of the Motor Transportation Division to the Transportation and Terminals Bureau. Unprofitable activities that have been found not essential to continued efficient operation have been discontinued, and overlapping functions have been consolidated. The general effect has been to tighten up the organization, reduce costs and improve the efficiency of the units. Although the progress made along this line has been substantial the program is continuing and will show more and more results as the process continues.

PERSONNEL

In connection with the overall reduction in the number of employees and the substitution of local employees for employees recruited from the United States, I feel that I must point out that most of the gains will be lost if the United States citizen employees who are retained on the job are not adequately compensated and fairly treated. As a result of action taken by the Congress last year, an independent survey of the compensation pattern of our employees was made by a management firm which has recommended retention of the 25 percent differential and substantial increases in fringe benefits to offset reductions in real compensation that our employees have been subjected to in comparison with comparable employees in the United States. The report of the management firm and the recommendation of the Board of Directors of the Company in reference to the report have been separately submitted to the committee. I mention the subject here only to emphasize that with reductions in the number of United States citizen employees failure to recognize the necessity for fair and even generous treatment of those who remain can result in the loss of benefits to the Government of the program of economy and efficiency to which I have referred.

ESTIMATED DECLINE IN TRAFFIC AND REVENUES IN 1955

Although traffic through the canal continued at a record level through the first 6 months of this fiscal year, the best estimates of the situation indicate that traffic, and therefore tolls revenues, will decline sharply in fiscal year 1955. We estimate that the number of transits during that year will drop to 8,391 and that tolls revenue will be reduced to about $32 million. That decrease in tolls revenue will result in an overall loss that year of $350,000 after payment of costs of operation, interest, depreciation, costs of Canal Zone Government and other costs of the Company, but before depreciation or amortization of the channel and other assets heretofore classified as nondepreciable. This deficit will not require the Company to seek appropriations in 1955, however, and in fact the budget for that year provides for payment into the Treasury of a dividend of $10 million from prior-year operations.

As requested in the conference report on the 1954 Appropriation Act, a report on the adequacy of present tolls rates will be submitted early in the present session of Congress.

For the record I might say at this point that the revised schedule of rentals to which the committee referred in the report on the 1954 Civil Functions Act was made effective July 1, 1953, and the provision of free hospitalization for employees has been discontinued as required by section 106 of that act.

The application of section 105 of the 1954 Appropriation Act has involved some problems which deserve some further consideration by the committee. Those problems concern the extent of the obligation of other agencies to reimburse the Canal Zone Government for school and hospital services, and the impact on certain groups of Canal Zone residents of new policies of recovering the cost of such services.

SCHOOLS

The Canal Zone Government has construed section 105 as requiring all other United States Government agencies on the Isthmus (about 15 in number) to reimburse the Canal Zone Government for tuition of the children of their uniformed personnel and United States citizen civilian employees. These agencies have been billed for tuition accordingly. In general, the agencies, other than the armed services, have declined to make payment on the ground that they have no statutory authority to pay such costs. The armed services take the position that their funds are not available to pay such costs in full.

Government agencies are not currently being billed for tuition of children of noncitizen employees residing in the Canal Zone, or of employees of the armed services paid from nonappropriated funds (about six in number). Tuition for such students is currently being billed to their parents. Prior to this school year no charge was made for these students. Imposition of tuition charges payable by private individuals works a substantial hardship in these cases.

HOSPITAL SERVICES

The other Government agencies are billed by the Canal Zone Government for hospital services furnished personnel specifically sponsored by such other agencies, such as the uniformed personnel of the armed services. Charges for the cost of hospital services furnished to civilian employees and their dependents are billed to the responsible individual. Imposition of these charges will cause great hardship to employees paid at local native prevailing wage rates and to a somewhat lesser extent to employees paid at United States rates. Heretofore, such employees and their dependents have been furnished hospitalization at rates substantially less than cost based in general on ability to pay. I believe that few, if any, local rate personnel will be able to pay the increased charges. Hospital services cannot be refused when hospitalization is necessary. This is not only a humanitarian requirement, but also is necessary for the protection of the public health. The result will inevitably be, however, that necessary medical care will not be sought in some cases when it should be, and that in other cases hospitalization of indigent patients will be at the expense of the

Canal Zone Government. These local rate noncitizen residents of the Canal Zone are regarded as a definite social responsibility of the United States Government and when hospitalization is required, the patient will have to be admitted as a charity patient.

The question of the extent of the obligation of other Government agencies to the Canal Zone Government under section 105 has been submitted for decision to the Comptroller General of the United States.

RELATIONS WITH REPUBLIC OF PANAMA

The Company-Government has continued to maintain its responsibilities as the United States in overseas areas. It has endeavored to foster and improve relations with the Republic of Panama by adjustment of its activities and policies to assist the Republic in improvement of its economy and social growth. The Company-Government has increased its purchases from the Republic and now procures all supplies when they are available at quality level and at competitive prices. The zone management has adopted the policy of reduction of service facilities to the indigenous worker and is endeavoring to accelerate the removal of these employees from Canal Zone housing to the Republic. This program is being hindered by an acute shortage of housing within the Republic. It is hoped that the Panamanian authorities will soon develop housing projects which can accommodate the excess of Panamanian citizens now resident in the zone, in which case most of the supporting services on the zone can be reduced or discontinued entirely.

It is also proposed to change the aspect of the educational program for the noncitizen resident on the zone and accentuate his educational orientation to his native country of Panama instead of the United States. Heretofore the educational system has been practically a counterpart of that in the United States and has resulted in poorly fitting these people to their own country. The reduction of aliens in the zone will also minimize many zone problems, will assist the Republic in its economic growth, and ultimately relieve the Company of a large volume of effort in supporting activities.

In the continued study of the housing problems of the zone the Company has developed the concept of two communities—the Pacific and the Atlantic—rather than a number of localized communities, each with its separate service installations, police, fire, and so forth, which are the present pattern and are literally the heritage of horse and buggy days. It is expected that in time we can significantly reduce the many service outlets. Recently we have closed the Ancon Clubhouse and three outlying police stations.

REDUCTION IN SUPPORTING ACTIVITIES

The future general program for all supporting activities such as employee services, other services, and commercial activities is one of shrinkage and retrenchment. The volume and returns from such activities can be confidently expected to be greatly diminished. As the fixed charges of the Canal Zone Government and interest are generally static, these activities will more and more be unable to bear their current burden of fixed costs. More and more charges then must

be carried by the canal as the contributions of other activities are reduced.

This concludes my formal statement and, for the details of the 1955 budget, I refer you to the justifications now in the hands of the committee.

I will be glad to answer any questions the committee may have.

Mr. DAVIS. That is a very concise and informative statement, Governor.

REIMBURSEMENTS FOR OTHER AGENCIES

Turning back to your general statement, General Seybold, you mentioned that there had been as a practical matter, only partial compliance with section 105 of the Appropriations Act of last year which, in effect, required full reimbursement to the Panama Canal Company or the Canal Zone Government of services furnished to other agencies of the United States Government, including the Defense Forces.

General SEYBOLD. Mr. Chairman, I am sorry if I left the impression, so far as partial compliance is concerned, because we believe, from the viewpoint of the Company, that we have complied. In other words, we are billing the agencies for those costs, and in the case of hospitals and schools other than those of the 12th grade, inclusive, we have billed the individuals so that we feel that we have complied.

I might say that those bills have not been paid, but we are billing the agencies and expect to be paid as they obtain their funds.

Mr. DAVIS. The matter really has not come to a test, then? In other words, you have billed them but they have not paid for the services?

General SEYBOLD. We do not have any power other than making demand for payment. We cannot force them. I think the matter has been up for consideration in all of the agencies in their headquarters in Washington. I do not know what the actual outcome will be in all cases. They have indicated an inability to pay, in some instances. We have not accepted that as an answer.

Mr. DAVIS. Their inability to pay on what grounds?

General SEYBOLD. Budgetary grounds.

Mr. DAVIS. They just do not have the money?

General SEYBOLD. No.

Mr. RILEY. There is no question about the legal obligation?

General SEYBOLD. I think in 1 or 2 on statutory grounds, that may have had something to do with it.

Mr. WHITMAN. One or two of the agencies have taken the position that they have no statutory authority to make the payments. They say that section 105 is not sufficient authority for them to make the payments, but the matter has been submitted to the Comptroller General for decision.

Mr. DAVIS. What agencies are involved in that position?

General SEYBOLD. The CAA is one.

Mr. WHITMAN. The State Department.

General SEYBOLD. The Veterans' Administration. I believe those are the ones.

Mr. WHITMAN. Those are the major ones; yes.

General SEYBOLD. I think those are the main ones, Mr. Chairman.

Mr. WHITMAN. I might say, Mr. Chairman, that on the other hand, with regard to statutory authority the Armed Forces take the position that they cannot exceed the general worldwide average for payment of tuition costs. In other words, if the costs exceed the worldwide average established by the Department in another statute, they have taken the position that they cannot go over that in making payments to us.

Mr. DAVIS. An average is established, I would think, by the fact that some charges are higher at some places than they are at another, and how could they take the position that because your charges happen to be higher than the world average, they cannot make the payments?

Mr. WHITMAN. I cannot answer that question, Mr. Chairman, but they have taken the position that they cannot do it.

Mr. DAVIS. And that question is now before the Comptroller General for decision?

Mr. WHITMAN. Yes.

Mr. DAVIS. On paper, at least, you have taken the position that you are to be fully reimbursed in accordance with the provisions of section 105, but actually you have not been paid on that basis. Are you being paid on the old basis or have you not been paid at all?

General SEYBOLD. We have not been paid.

Mr. NOBLE. No payment has been paid this year by any agency. But some of them have indicated it is their intention, as a matter of procedure, to make payment; it is just a matter of processing the bills. I think, in all fairness, the statement should be made that some of the agencies say they do intend to pay.

Mr. DAVIS. We can be assured that you will pursue this matter with the Comptroller General's office in order to make every effort to get full reimbursement as provided by section 105 of the appropriation act?

General SEYBOLD. That is correct.

MEDICAL AND HOSPITAL CARE

Mr. DAVIS. Section 106 of the current appropriation act in effect prohibits free medical and hospital care to employees of the company, or the Canal Zone government. What has been done in compliance with that section, General?

General SEYBOLD. We have set up a tariff for the employees of the company government, which, in general, was a tariff based on what had previously been charged, for dependents. The tariff is based on the hourly wage, or wage of the employees, and varies from a dollar a day for the 50-cent-an-hour employees to $10 a day for private patients. For the employees the maximum rate is $6 a day; that tariff we can furnish to the committee if you desire to have it.

Mr. DAVIS. If you will furnish copies of that, we will insert certain portions in the record.

(The information requested follows:)

TABLE 1.—*Outpatient medical care: Consultation fees*

Class of patients	During office hours		Home visits	
	District and other clinics	Specialized hospital clinics	8 a. m. to 4 p. m.	4 p. m. to 8 a. m.
Local rate employees, and their dependents, of the Panama Canal Company and Canal Zone government and patients in groups 1 and 2	$0.50	$1.00	$1.50	$3.00
United States rate employees, and their dependents, of the Panama Canal Company and Canal Zone government, and patients in groups 3, 4, 5, and 6	1.50	2.00	3.00	6.00
Private pay patients, others for whom a charge is not otherwise provided, and patients in groups 7 and 8	3.00	5.00	10.00	15.00

NOTES

1. No charge will be made for examination or treatment in a first-aid station.
2. Additional charges for X-ray examinations, laboratory services, and other procedures listed in table 6 shall be made on the same basis as for inpatients.
3. A flat charge per visit will be made in all prenatal clinics of ½ the fee shown under "District and other clinics" for patients in groups 1 to 7, and $4 per visit for patients in group 8. Laboratory charges, if any, are included in the flat-rate charge.

INPATIENT CARE—GORGAS AND COLON HOSPITALS

A. The per diem charge shall be in accordance with the rates prescribed in column 1, table 2, and includes subsistence, routine examination, nursing care, dressings, and other routine procedures not listed in table 6.

B. Additional charges for private room when requested by patient:

(1) Private room, with bath, per day	$4.00
(2) Private room, without bath, per day	3.00
(3) Double room, with bath, per day, each occupant	2.50
(4) Double room, without bath, per day, each occupant	1.50

C. Special nurses or special attendants, when requested by patient:

(1) Special nurse, 8 hours	$15.00
(2) Special attendant, 8 hours	4.00

D. Companion of patient: The patient's per diem rate, plus $2.00 per day.

E. Newborn infants: No charge for newborn infants as long as mother remains in hospital.

F. Number of days in hospital: To determine the total number of hospital days to be charged, the day of admission will be counted regardless of the hour of admission, and the day of discharge will not be counted, unless the patient is discharged on the day of admission.

G. When a patient has been in hospital for 3 months, report will be made to the health director, giving such data as diagnosis, prognosis, and status of any pending charges.

H. The health director is authorized to remit any or all charges for inpatient or outpatient treatment necessary for the protection of the public health, or to make reductions, not to exceed 50 percent of the charge on account of lack of means of the patient, or in case of destitution, to remit the charges entirely.

TABLE 2.—*Table of charges, Gorgas and Colon hospitals*

Groups	Hospital wards (per day) (1)	Obstetrical care including 6 days' ward and operating room charge, spontaneous deliveries only (2)	Surgical operations and diagnostic procedures; percent of maximum charge (see table 6) (3)
			Percent
Group 1: $0.50 hourly or $86 per month or less	$1.00	$25	10
Group 2: $0.51 to $1.30 hourly or $86.01 to $225 per month	1.25	40	20
Group 3: $1.31 to $2.30 hourly or $225.01 to $400 per month	2.50	60	25
Group 4: $2.31 to $2.87 hourly or $400.01 to $500 per month	3.50	75	30
Group 5: $2.88 to $4.03 hourly or $500.01 to $700 per month	5.00	80	40
Group 6: $4.04 hourly or $700.01 per month or more	6.00	100	50
Group 7: Personnel of other Government agencies when charges are for personal account of individual concerned	8.00	120	60
Group 8: Private pay patients	10.00	150	[1] 100

[1] Of maximum charge.

NOTE.—Additional charge, as provided in par. 7b, shall be made for private room.

TABLE 3.—*Charges for dental treatment at all dental clinics operated by the Health Bureau and by District dentists*

	Groups 1 and 2	Groups 3, 4, 5, 6, 7, and 8
1. Dental X-rays:		
(a) Single film	$0.75	$1.50
(b) Each additional film	.25	.50
2. Fillings:		
(a) Amalgam	$1.50–3.00	$2.50–5.00
(b) Porcelain (synthetic)	1.50–3.00	2.50–5.00
(c) Gold inlay (not included in bridge)	5.00–10.00	5.00–20.00
(d) Temporary or cement base	.75–1.50	1.50–3.00
(e) Acrylic inlay	3.00–10.00	5.00–15.00
3. Extractions and oral surgery:		
(a) Tooth extractions, local anesthetic—		
(1) Single	2.00	4.00
(2) Multiple, each	1.00	2.50
(b) Tooth extraction, general anesthetic, each	3.00–5.00	5.00–10.00
(c) Tooth extraction, deciduous—		
(1) With local anesthetic, each	1.00	2.00
(2) With general anesthetic, each (including operating room charge)	1.50	2.50
(d) Removal of impacted teeth, each	2.00–5.00	5.00–15.00
(e) Alveolectomy, partial	2.00	3.00
(f) Alveolectomy, complete	5.00–8.00	10.00–15.00
(g) Tumor or cyst, removal of or similar operation	4.00–8.00	10.00–15.00
(h) Gum resection, single arch	5.00–8.00	10.00–15.00
(i) Tooth erupting, lancing of	1.00–2.00	2.00–5.00
(j) Fracture, reduction of, maxilla or mandible	4.00–10.00	5.00–25.00
(k) Wiring of jaw or application of splint, following fracture	3.00–10.00	5.00–25.00
(l) Abscess, incision and drainage	2.00	3.00
(m) Apicoectomy	5.00–8.00	10.00–15.00
4. Crowns:		
(a) Gold, all types	5.00–12.00	12.00–20.00
(b) Porcelain, jacket crown	5.00–12.00	15.00–35.00
(c) Acrylic crowns	5.00–12.00	15.00–35.00
(d) Crown, repair of	2.00–5.00	3.00–6.00
5. Bridgework, fixed:		
(a) Units of fixed bridgework (gold or gold and porcelain)	5.00–12.00	10.00–25.00
(b) All procelain or acrylic bridges, per unit	5.00–12.00	10.00–40.00
(c) Bridges, repair of	2.00–12.00	2.00–35.00
(d) Replace broken facings, bridge	1.50–3.00	3.00–5.00
6. Bridgework, gold, vitallium, ticonium, or similar metal:		
(a) Cast removal bridgework, per unit	3.00–18.00	3.00–25.00
7. Dentures:		
(a) Full upper or lower, vulcanite, each	20.00–30.00	40.00–50.00
(b) Full upper or lower, acrylic, each	25.00–50.00	50.00–70.00
(c) Partial denture, vulcanite	15.00–50.00	30.00–60.00
(d) Partial denture, acrylic	25.00–50.00	50.00–90.00
(e) Lingual or palatal bar	10.00–15.00	10.00–15.00
(f) Rebase denture	5.00–15.00	15.00–30.00
(g) Denture repair	2.00–10.00	4.00–15.00

TABLE 3.—*Charges for dental treatment at all dental clinics operated by the Health Bureau and by District dentists*—Continued

	Groups 1 and 2	Groups 3, 4, 5, 6, 7, and 8
8. Oral prophylaxis and treatment of gum conditions:		
(*a*) Oral prophylaxis, adult, per sitting	$1.00–$2.00	$2.00–$5.00
(*b*) Oral prophylaxis, children	1.00– 2.00	2.00– 3.00
(*c*) Gingivitis, treatment for, per sitting	1.00	2.00
(*d*) Gingivitis, Vincentis treatment for, per sitting	1.00	2.00
(*e*) Pyorrhea, treatment for, per sitting	1.00– 2.00	2.00– 3.00
(*f*) Sodium fluoride prophylaxis for prevention of dental caries, series of treatment	5.00	5.00–10.00
9. Root canal work:		
(*a*) Devitalization and removal of pulp	1.50– 3.00	3.00– 5.00
(*b*) Root-canal treatment	1.00	2.00
(*c*) Root-canal filling	1.00	2.00
10. Orthodontia appliances and treatments:		
(*a*) Appliances, each	15.00–25.00	25.00–50.00
(*b*) Orthodontia treatments, per month	5.00	10.00
11. Miscellaneous:		
(*a*) Treatments, pre- or post-operative, per sitting	.25– .50	1.00– 1.50
(*b*) Occlusion balanced	2.00	3.00
(*c*) Various minor operations	1.00– 5.00	3.00–15.00
(*d*) Gold dummies on dentures	6.00	10.00
(*e*) Recement bridge	1.00– 2.00	2.00– 5.00
(*f*) Recement crown or inlay	1.00– 2.00	1.00– 3.00
(*g*) Crown, removal of	.50– 1.00	1.00– 2.00
(*h*) Bridge, removal of	1.00– 2.00	2.00– 4.00
(*i*) Anesthesia, local of cavity preparation	.75	1.00
(*j*) Emergency treatment for relief of pain, for conditions not specifically included above	1.00	2.00
(*k*) Treatment for unusual or rare conditions not covered above	(1)	(1)
(*l*) Professional visit at home of patient or office consultation	(2)	(2)

[1] Estimated with approval of Health Director.
[2] Same as outpatient medical charge.

NOTES.—1. A unit is defined as each attachment to a natural tooth and each artificial tooth making up a bridge or case.
2. For dental services furnished outside of scheduled clinic hours to patients in groups 1 to 8 the charge shall be double the rate shown.

Mr. DAVIS. How do these schedules of charges that you have established compare with those for other Government hospitals?

General SEYBOLD. I am not too familiar with the charges of other governmental hospitals, and particularly as they might relate to the same category of personnel. I know that these are quite in accordance with charges made to dependents at military hospitals. Now, as to whether they are, or would be comparable to the Veterans' Administration and others, I am not too familiar.

Of course, we feel that the situation would not be entirely comparable. I think we could get some information on that matter if the chairman desires us to take it up, but when we get into this field of comparative charges, we immediately get into the field of noncomparability of the personnel that is actually hospitalized.

Mr. DAVIS. You have so many problems and so many other studies necessary to make and confronting you, I do not think we will ask you to pursue that any further just now.

CHARITY PATIENTS

What about the charity patients, do you have a provision for taking care of them?

General SEYBOLD. Of course, we have no provision but when they come to the hospital, as they do, the hospital absorbs the cost by various means in the operation costs. I do not think we budget specifically for the charity group.

Mr. DAVIS. In the report for the current fiscal year, the committee asked, and I think you submitted to us, a sheet showing a table of the cost levels and deficiency for the operation and for the medical clinic. Do you have current information to cover that matter?

General SEYBOLD. I think this is the information the chairman wishes.

Mr. DAVIS. I note this has been furnished and we will insert it in the record at this point.

(The information requested follows:)

Hospital and medical clinics

	1953 actual	1954 estimate	1955 estimate
Hospitals:			
Costs	$4,107,730	$4,077,700	$4,518,200
Revenues	1,087,143	1,387,300	2,204,700
Deficiency	3,020,587	2,690,400	2,313,500
General and administrative expense distribution included in costs	178,549		
Deficiency before general and administrative expense	2,842,038	2,690,400	2,313,500
Medical clinics:			
Costs	457,319	402,100	425,700
Revenues	152,159	175,200	188,300
Deficiency	305,160	226,900	237,400
General and administrative expense distribution included in costs	17,291		
Deficiency before general and administrative expense	287,869	226,900	237,400

CONSOLIDATION OF HOSPITALS

Mr. DAVIS. There has been, as the result of some discussion that we had last year, a consolidation of hospital operations in the Panama Canal Zone area; has there?

General SEYBOLD. No.

Mr. DAVIS. My recollection is that we discussed the matter and that was taken up with the Armed Services Subcommittee and the armed services testified before that committee that it could be done and would be done. Can you tell us what has or has not happened in that regard?

General SEYBOLD. Mr. Chairman, there have been several plans proposed and the matter has been under, you might say, constant effort to develop a satisfactory plan for the consolidation of the hospitals in the zone. But due to hesitancy on the part of the Armed Forces for reasons they felt would be inimical to their personnel, no program, no plan has been worked out or adopted to date.

Mr. DAVIS. That is a great disappointment to the members of this subcommittee. I remember after our discussion with you last year that Mr. Wigglesworth, chairman of the Armed Services Appropriation Subcommittee discussed that matter with representatives of the armed services. I believe that I saw a letter signed by some representatives of the armed services to the effect that they could make the consolidation and reduce the existing 4 hospitals in the canal to 2, 1 at either terminus of the canal.

General SEYBOLD. I think, although Mr. Bacon here is more familiar with the aspect of the armed services than I am, I think the last move of the program was placed in the hands of one of the services which objected to losing their hospital, that no consolidation on that basis has been reached—no agreement has been reached.

I would like to call the attention of the committee to the fact that this budget does include a consolidation. At the time the budget was made, we had understood that an agreement would be reached and the budget has been made on that principle. Since then, we have not been able to accomplish the consolidation due to some opposition on the part of some of the Armed Forces.

Mr. DAVIS. I would like to read into the record at this point a statement which appears in the Appropriation Committee's report for the Department of Defense appropriation bill for 1954, which reads as follows:

> Recent hearings by the subcommittee handling Canal Zone government appropriations disclose duplication of Federal hospital facilities in the Canal Zone. The Army and Navy each operate a hospital there in addition to two operated by the Canal Zone government. More recent hearings by the Subcommittee on Armed Services confirms the duplication. It is evidence that 2 of the 4 hospitals with proper cross-servicing will meet current needs. Defense officials at first flatly disagreed that this was the feasible or wise thing to do, but, as evidenced by a letter from the Department on page 481 of the printed hearings on Navy appropriations, the Department now fully agrees that two hospitals will suffice. This matter has been under consideration in the Department since 1947. A further study of the situation is contained in a report by the General Accounting Office dated June 30, 1952. It is a reflection on those involved that this arrangement was not reached long ago.

General SEYBOLD. Mr. Chairman, I would like to have Mr. Bacon make a statement on the subject in behalf of the Secretary of the Army.

Mr. DAVIS. We would be pleased to have any statement that will give us encouragement in this connection.

Mr. BACON. To begin with, Mr. Chairman, the canal government has indicated its complete cooperation with that consolidation program, and I think the Governor officially said he would assume responsibility if it were handed to him. That is the thinking until something happens.

So far as the Army is concerned, the recommendation has gone up, from the Under Secretary's Office through the Secretary's Office to the Department of Defense recommending that the Canal Zone Government assume full responsibility for hospitalization within the Zone, and that the Fort Clayton Hospital be closed, and that the Navy hospital at Coco Solo be turned over to the Canal Zone Government for operation and that certain adjustments be made involving the hospital at Colon.

Mr. BACON. To continue on the record, the problem involving cross service, involves the establishment of some outpatient facilities and a small clinic, I would say, at Colon, and there is also the possibility of reopening of Fort Gulick which was originally built for hospital and has now been closed, but since is being used as a school for military men, for the Air Force.

General SEYBOLD. It is a school for training South American and Central American personnel, not Air Force but for the Army.

Mr. BACON. The answer to your question specifically is that this recommendation, as was mentioned, is now in the hands of the Depart-

ment of Defense. Meanwhile, there is no concurrence on the part of the Navy or the Army. The Assistant Secretary of the Navy went down in November, with the Under Secretary of the Army, Mr. Johnson, to inspect these facilities, and the problem was put up to them with the hope that they could get together on the matter. That did not occur. Fogler has come up with a written recommendation, to Mr. Johnson's successor, as Under Secretary, Mr. Slezak recommending opposition on the part of the Army, the recommendation being mainly that the military be in complete charge of the hospital of the Army, and the Navy be in complete charge of Coco Solo, to make it available for civilians, and the Army in charge of the Clayton Hospital, and make it available for civilians, and the closure of the hospital at Gorgas.

That memorandum came up about a week ago to the brandnew Under Secretary, who now faces the problem. We hope that he will forward it with nonconcurrence to the Secretary of Defense. The situation is up to the proper authorities.

Mr. DAVIS. It does not appear that either the Navy or the Army has paid very much attention to the rather strong language of the Appropriations Committee in its report of last year.

REIMBURSEMENT FOR MAINTENANCE OF DEFENSE FACILITIES

One thing in connection with the discussion of section 105, General, that I overlooked, was the reimbursement of the amount expended by the Canal Zone in maintaining defense facilities in a standby condition for the Department of Defense. Can you tell us what has been done in that connection?

General SEYBOLD. Yes; we have billed the Defense Department for those charges, and, as far as I understand—and the Comptroller can give you more details—there is no question but what those bills will be paid.

Mr. NOBLE. So far, we submitted the bills locally, and they have been forwarded to Washington—they have been submitted to the Navy, and they are going to Washington, to be cleared. We are billing them quarterly for that work.

Mr. DAVIS. What are your prospects of getting paid, General?

General SEYBOLD. I think they will pay. It is an agency, and I think they have funds, and I do not believe we will have any difficulty. It is just a matter of going through the routine of processing.

Mr. DAVIS. I think I will ask you, Governor, as of June 30, 1954, if you will by letter give us a report on this entire reimbursement matter that we have before us here this morning, based on section 105 of the current appropriation act.

General SEYBOLD. Yes; I think I understand.

ARMED FORCES PERSONNEL

Mr. DAVIS. Now, section 107 of the same act, which is Public Law 152 of the 83d Congress, which is the Appropriation Act for 1954, prohibits, with the exception of yourself and your Lieutenant Governor, payment of funds for the employment of military personnel assigned to the Canal Zone except their military pay.

General SEYBOLD. Yes.

Mr. DAVIS. I assume that there has been complete compliance with that directive?

General SEYBOLD. Yes.

Mr. DAVIS. I will ask you if you will insert in the record at this point a table similar to that which was supplied to us last year, which appears on page 87 of the printed hearings of last year.

General SEYBOLD. Yes.

(The information requested follows:)

Armed Forces Personnel assigned to Canal Zone Government-Panama Canal Company

Position	GS equivalent	Rank	Branch of service	Annual military pay and allowances
Health Director	GS-15	Brigadier general	Army	$14,141.28
Chief, Equipment Service, Gorgas Hospital.	GS-14	Colonel	Army Medical Corps	11,774.64
Chief, Board of Health Laboratory.	GS-14	do	do	11,774.64
Chief, Medical Service, Gorgas Hospital.	GS-14	do	do	10,707.60
Superintendent, Gorgas Hospital	GS-15	do	do	11,063.28
Chief, orthopedic section, Gorgas.	GS-13	do	do	10,707.60
Assistant Chief, Equipment Service, Gorgas.	GS-13	do	do	11,063.28
Chief, Surgical Service, Gorgas	GS-14	do	do	11,418.96
Engineering and construction director.	GS-15	do	Army Corps of Engineers.	9,863.28
Transportation officer, Gorgas	GS-9	Lieutenant colonel	Army Medical Supply Corps.	8,084.88
Urologist, Gorgas	GS-13	do	Army Medical Corps	9,107.04
Chief, X-ray Service, Gorgas	GS-14	do	do	9,107.04
Superintendent, Corozal Hospital.	GS-14	do	do	9,462.72
Military assistant to Governor	GS-12	do	Army Corps of Engineers.	8,084.88
Dermatologist, Gorgas	GS-13	do	Army Medical Corps	9,462.72
Psychiatrist, Gorgas	GS-13	Major	do	8,368.32
Dental officer, Gorgas	GS-11	do	Army Dental Corps	8,368.32
Chief, Industrial Division	GS-14	Captain	United States Navy	10,218.96
Port captain, Balboa	Unclassified	do	do	10,218.96
Marine director	GS-15	do	do	10,574.64
Chief, navigation division and port captain, Cristobal.	GS-14	do	United States Naval Reserve.	10,218.96
Assistant to Chief, Industrial Division.	GS-11	Lieutenant commander.	United States Navy	7,168.32
Chief, Division of Preventive Medicine and Quarantine.	GS-13	Medical director	United States Public Health Service.	12,130.32

NOTE.—The Governor-President receives Company/Government salary, $15,000, and Lieutenant Governor-Vice President receives $14,650. No other military personnel receives Company/Government salary.

THURSDAY, FEBRUARY 4, 1954.

TOLL CHARGES

Mr. DAVIS. At this time the committee recessed on yesterday, we had reached the point in the general discussion on the matter of toll charges at the Panama Canal, a subject which we always find necessary to discuss each year with you. I think there are two items in particular that we would like to have you discuss rather generally: (1) The basis upon which the tolls are set, and (2) the method by which they

are set and then as a corollary to the first part, the provision for amortization and interest and the reserve fund.

AUTHORIZATION

General SEYBOLD. It will be remembered that the committee last year, in the appropriation bill for 1954 stated its desire and pointed out the urgency of keeping current studies regarding the adequacy of toll charges for the use of the canal, and its desire that the study be completed and submitted to the Congress so as to be sure that the committee would have it for the 83d session of this Congress. Before I go into that, I would like to take up some of the background concerning it.

The establishment of tolls for the use of the Panama Canal presently is covered principally by section 411 to 413 of title 2 of the Canal Zone Code as amended by the act of September 26, 1950, known as Public Law 841 of the 81st Congress, and also generally known as the Reorganization Act.

Section 411 of title 2 vests in the company the authority to prescribe from time to time changes of tolls for the use of the canal, subject to the provisions of section 412 of title 2, which prescribes the basis of the tolls. Section 411 is also subject to the proviso that the company shall give 6 months notice by publication in the Federal Register of any proposed changes in the rates of tolls during which the public hearing shall be conducted, and that changes in rates shall be subject to the approval of the President of the United States whose action in the matter is then final and conclusive.

The history of the tolls is a matter, one of the prime problems of the canal, since its inception, and it has been changed several times.

The present rate of the effective toll rate was prescribed by the Presidential proclamation effective March 1, 1938; that is, tolls shall be charged at the rates of 90 cents for laden vessels, 72 cents for vessels in ballast, and 50 cents per displacement ton for warships.

I do not believe it particularly necessary, or maybe even desirable, to bring the picture up to the present, from 1912 and 1914 toll rates, because this presently is the rate structure that is charged.

Actually the reorganization was effected because of the fact that there was an attempt to increase the tolls to $1 in 1948 when the Governor of the canal, and approved by the President, to take effect October 1, 1948, proposed such increase. In other words, when, in 1948, the President approved the request of the Governor to increase the toll to $1, a protest was made by shipping interests and a study of the problem was made by Congress as well as the Bureau of the Budget, which resulted in the proclamation being withdrawn eventually, and the enactment of the Reorganization Act of 1950.

As a part of such reorganization, the formula of establishing tolls was prescribed in the act as amended; the principal section of the Canal Zone Code covering tolls was included for the use of the canal.

Now, section 412 (b), is the section which prescribes really the toll formula and is the one thing we must keep in mind, because this section is the section which prescribes the present method of setting tolls. Again, I think possibly it might be advantageous to read this section:

Tolls shall be prescribed at a rate or rates calculated to cover, as nearly as practicable, all costs of maintaining and operating the Panama Canal, together with the facilities and appurtenances related thereto, including interest and depreciation—

You will notice it omits amortization—

and an appropriate share of the net costs of operation of the agency known as the Canal Zone Government. In the determination of such appropriate share, substantial weight shall be given to the ratio of estimated gross revenues from tolls to the estimated total gross revenues of the said corporation, exclusive of the costs of commodities resold, and exclusive of revenues derived from transactions within the said corporation, or from transactions with the Canal Zone Government.

This section, by the way, has been one difficult of interpretation, and it has an extremely important bearing on the application of costs which, of course, in turn, affect the tolls.

Basically, it may be said that the problem of tolls now revolves around a general concurrence of major fiscal policy and determination and agreement between the various branches and agencies of the Government—the Bureau of the Budget, the Congress itself, and General Accounting Office, for the specific evaluation of assets, their acceptance and approval of specific accounting practices as related to the Panama Canal in the development of the toll rates.

That is putting it in quite a number of words but they are basically the problems upon which policy must be established.

Once the committee has, you might say, the concurrence or agreement on certain policies and issues that are in the tolls, we can go right along and make it just a matter, you might say, relatively of bookkeeping.

GOVERNMENTAL INVESTMENT

Now, the tolls question, and the ones which are involved here, first the development of the governmental investment in the plant and, by the way, the Company has now prepared an evaluation and is ready to set the valuation up for approval by the Bureau of the Budget, although certain refinements and a small amount of the plant still remains to be assessed, but that amount is so small that it will have no bearing at all on the matter of tolls.

The bulk of that work and all of it would effect—all of the effect I think on toll rates is downward—is that right?

Mr. NOBLE. Yes.

DEPRECIATION

General SEYBOLD. The second matter, of course, relates to determination of the principles of depreciation of our plant, and they revolve around the presently considered nondepreciable values, as to whether they are depreciable, or whether they should be amortized, the inclusion or the exclusion of interest during construction. And then, the problem of distribution of fixed charges of the Company, which in my layman's language, rather than in the way the Comptroller would say it, would be the distribution of charges between the supporting activities and the Canal itself, because the supporting activities, of course, generate revenue.

The distribution of fixed charges are those of the Canal Zone Government, interest, of course, on the Government plant and the general

administrative charges. I will ask the Comptroller to speak at some length on that later.

REVENUES

Then, the next problem is to develop the prospective revenues which is really a matter of projection of the traffic.

We have completed the study for the projection of the traffic. We have a study that has been prepared by EBASCO Services, Inc., which is a projection of the traffic over a 5-year period. There is no guide, to our knowledge, in the legislative history itself as to what period to select for tolls, so that we selected a 5-year period as being a realistic period—although, we cannot definitely determine what the traffic will be because there are so many conflicting events that can happen to a product. After all it is the volume of traffic which is the product of the canal, and it has relationship to many fields, both political and economical. Actually and strangely, the political field probably has a much larger effect on the canal that the economic, but those are the ones about which one must make assumptions in that regard.

So we have developed the prospective flow of traffic through the canal.

It has been developed, in my opinion, in a very matter of fact and sound approach by commodities rather than on any theory based on the wealth of nations or world traffic and so on.

We find, after a detailed study, that there are about 11 general commodities which furnish about 75 to 77 percent of the volume of traffic transiting the canal, and a study of the trade routes, and these commodities and the points of origin, points of delivery, we feel have provided a very realistic approach to the problem of traffic projection.

Generally, that projection indicates that traffic will be reduced over its present alltime high.

It is difficult to approach this problem with the full report which I can assure the committee we intend to furnish in connection with the committee's request of last year. We hope to get it here by somewhere around the 1st to 15th of March.

That report would, in general, be something like this: We can show our projection of the traffic; we can show the effect of the various items that are discussed which affect the development of the toll rates; and it may be said that if we depreciate our plant, if we utilize the interest during construction, in the charges and if we distribute our costs in certain ways, either by formulas which are generally sponsored by the Bureau of the Budget or the different approach which the Company has developed, then we would say that for the last of the 5-year period, it will be necessary to increase the tolls.

So those are the elements from which tolls questions should stem. First the actual decline in volume of trade that this most excellent report indicates; secondly, the development of these somewhat, may I say, controversial determinations of valuations of assets and charges; then, of course, there is a matter which one must be concerned about as to the timing. We also in this, I neglected to say, Mr. Chairman, we also feel that we have not received from Congress or anyone else, and of course section 412 (b) prohibits the policy or the principle that any profit shall be included in tolls—just costs.

Then when these are resolved, we can make a definite recommendation as to the timing and what we feel—and it is the Company's responsibility by law—that we do effect such changes in tolls, but these are basic concepts which would be involved in any tolls hearings. They would be controversial items and it would be extremely controversial in such a hearing, and I do think that before the Company can carry through, it will have to have some guidance by the Congress and the Bureau of the Budget in this whole matter.

Now, Mr. Chairman, that is a general overall picture. It does develop these questions and we recognize that some of these items, ones on which you have requested legislation to be furnished, and of course when that legislation comes, why then I am sure we will get the developments that come from that.

Mr. DAVIS. You feel that basically that toll legislation at the present time, specifically for interest and depreciation, ought to be included, at least, if approached rather cautiously, would raise a serious question about your including amortization on construction costs at the present time, in your tolls discussion?

General SEYBOLD. I just do not know how to answer that specifically, Mr. Chairman. There are conflicting viewpoints within the Congress and over the Nation, as to how this should be done. The basic policy of how the Panama Canal, which is, in itself, an operating agency, should be run, I do not believe we should attempt to answer. I think all of us feel that there should be the return of the investment to the citizens of the United States. I think that is the policy which the Company, the Board of Directors, have firmly agreed to. The Board of Directors even goes further to some extent and feels that we should set up a reserve against the future, because of the plant becoming obsolescent. So that we do have this reserve, as any corporation does, to meet these extraordinary charges which we are now coming into.

So that on that basis, we feel that the plant should be depreciated, or may be amortized, so that at least these funds should be returned to the citizens of the United States.

As you and I know, there are conflicting views on this. One cannot give the full value to this as a defense measure as one of the items.

So that on those larger policies, as I say, I think we must ask the Congress how to make the determination.

There is one element here that is extremely difficult to handle within the management of this corporation, under the present law, and may I go off the record on this, because it is a little difficult to explain. The Comptroller here has sweated blood on this matter for a long, long time.

HOUSING PROGRAM

Mr. DAVIS. Proceeding further with some of the committee's comments in the report last year, Governor, on page 15 the committee said:

> The committee will expect the Governor and the Board to take prompt action on the entire local rate problem and file the results thereof with the committee not later than January 1, 1954.

That, of course, is the rate problem with respect to the housing program. Will you comment on that for the record, please?

General SEYBOLD. I think that this report, on the local rate housing program, has been furnished the chairman of the committee; has it not?

Mr. DAVIS. It has.

General SEYBOLD. I touched somewhat on this in my opening statement.

The development of the conception of policy, that is, the status of the local rate policy, is now this: We are building no more. We actually have abandoned the site which had been partially prepared at the time we arrived there, and at some loss, in order to save a great deal of the future funds; that is, funds which would have gone into construction of that townsite. So that the policy now is a planned reduction, or—not a reduction, a cessation of any further construction of the local rate housing. We find that it is a burden. It does not assist the country of which they are citizens, and it is far better that they absolutely live in Panama. So as to the present housing, we are trying to eliminate entirely the use of the old-type houses by attrition as best we can and limit usage to just the new houses that have been built in recent years.

LOCAL RATE OCCUPANCY

Mr. DAVIS. It appears that your local rate occupancy, in accordance with the report which you submitted to the committee, will have declined about 500 units in the course of the current fiscal year. Are those units to be demolished?

General SEYBOLD. Yes. I think we are a little bit ahead of schedule, but just about on it. Those are the older houses that were built at the time of the construction of the canal and are entirely uneconomical to maintain. Not particularly too healthy; they are sanitary, if you can keep them that way, but the housing in the zone is short, and in Panama.

Mr. DAVIS. This report represents a progressive reduction in the housing so that by June 30, 1958, it is expected you will have demolished all of the old local rate housing, so that at that time 750 units of recent construction will be the only ones that will be occupied?

General SEYBOLD. There are some that we are utilizing, that are entirely suitable, but economical to maintain.

RENTAL RATES

Mr. DAVIS. Last year we had considerable discussion about the rental rates there.

General SEYBOLD. We now have placed the rental rates on the United States quarters to sufficiently return funds to cover all of the present costs, and the last increase was made at the beginning of the fiscal year 1954, which, you will remember, includes all interest charges.

Mr. DAVIS. As I recall, the Booz, Allen & Hamilton report indicates, or recommended a very sharp decrease in rentals. What was the basis of that recommendation?

General SEYBOLD. They felt that the tropical costs, as allocated, in fact, the cost was not the way to approach the rental charge in this. You will recall, I think, in our report to the committee which I believe

a copy was sent to this committee—that the Board did not go along with that. The Board said they agreed in principle with the recommendation of rental reduction and free transportation, but the questions are complex and we would like to consider them further, the question as to whether the exact methods recommended are the best ones to achieve the desired results.

Mr. HAND. When you say Board, you mean the Board of Directors of the Company?

General SEYBOLD. Yes, the Board of Directors.

Mr. HAND. They agreed in principle with rent reduction and to free transportation?

General SEYBOLD. Yes, they agreed in principle to these benefits, that they should, in general, accrue to the employees; yes.

Now, that principle is that we feel the employee, not only for the good of the employee but also for the benefit of the organization of the Company, should maintain these benefits, basically because they feel that they are necessary to maintain a proper employee force on the zone. That is the viewpoint of the Board of Directors of the Company.

They did not agree on the flat 50 percent decrease of rental rates. But they thought, in general, those same benefits should accrue to employees, possibly through some other means, one of which, they felt was that the employees, for example, should not be expected to pay for the excess maintenance costs which arise from the location of houses in tropical areas. Then some question as to the proper distribution of charges and general corporate overhead, and the question also of interest charges which are allocated to the housing should be considered.

TURNOVER INCREASE

Mr. RILEY. Governor, the Board of Directors has advanced one of the reasons for its action in regard to employees as that of the turnover increase in the last 2 or 3 years. Has that existed to any marked extent among the employees?

General SEYBOLD. There are times, I would say, when, in general, it has increased. It suffers from the periodic influences of various effects which come down, but generally, I would say that it has increased.

Mr. RILEY. To any marked extent during the last 3 years?

General SEYBOLD. I do not have the last record in front of me—for the last year. But I would say to an extent possibly even more. But it has increased. It is not entirely out of line with that past record, but, in general, it has shown the effect of these various things in their benefits.

Mr. RILEY. With the elimination of full time and the increase in unemployment in the States, do you contemplate that that situation is going to continue?

General SEYBOLD. No. I have this in mind: I would say that it probably now has reached a fairly level plateau.

Mr. RILEY. Some of your troubles, I would imagine, were caused by the fact that we had rather unprecedented employment in the States. Now that it is passing and we are getting back to normal, I would not think you would have trouble getting employees down there.

General SEYBOLD. We have distinctly now difficulty in obtaining some skills and professional services. There is a shortage, of course, in one connection with medical services, nurses, doctors, and dentists. There is a shortage in the professions, engineers, and we cannot even get them. Then with the crafts, our main shortage is with electricians, to some extent carpenters, and some of the other areas, such as boilermakers and people like that.

I would guess that the supply of electricians is short here in the United States because of all of the buildings, and the types of buildings and construction that is going on. Machinists the same way.

We do experience quite a bit of difficulty in those areas in meeting our requirements. And of course it has its reflection on employment; the situation here reflects right back there.

Mr. RILEY. Yes.

General SEYBOLD. In a number of these crafts and skills, they are making as much here as they do down there, with the 25 percent. I think you have this table before you, do you not?

Mr. RILEY. Yes.

General SEYBOLD. The rate of voluntary termination shown on page 49 indicates it is leveling off.

Mr. RILEY. It has been fairly level?

General SEYBOLD. The Comptroller points out in 1951 the rate was extremely high, 18 percent, and that is when the income tax was placed in effect there. Now, through the years that has dropped down to around 10 or 12 percent.

Mr. DAVIS. Is that not a rather serious reflection upon those people? When they begin to have an income tax levied on them, they begin to get up and get out?

General SEYBOLD. I would say this, the individuals at that level at that time, felt that the return for those living in the zone, working down there under those conditions with the loss of income tax, was not sufficient to keep them there. Now, the background is something else, but that is the motivating thought behind it.

Mr. HAND. Working under what conditions? Under conditions where they are given free hospitalization, very cheap hospitalization, rentals roughly about equal to 10 percent of their income, a fair rate of wages, plus 25 percent, what conditions are they complaining about?

General SEYBOLD. It is very difficult to show. I think the report makes a better statement on that than I can. I can only assure the committee that there is a loss, that the tropical conditions do affect the individual, and it affects his family in addition to the out-of-pocket costs which I think the report shows. It will appear to many visitors, visiting the zone, for instance, that they have reached utopia. Visitors go there and see everything, but after one has been there for a while, they realize that the tropical conditions do affect the individual and they affect his work. And, it is not that way, although I can readily understand why people get that impression.

These out-of-pocket, these definite costs, which accrue to one in the Tropics in the zone, are definite. They are additional expenses to which he goes, and you must remember that he has no option to leave the house; he can't go out and vary his rental, maybe increase the loss in some other type of expenditure pattern that he might adopt.

But the three items which greatly affect the individual are, first, of course, the additional costs which accrue, such as having furniture fall apart, and I have experienced that. Then the vacation which he must have. I know that that sometimes is challenged, but I am convinced that if he is going to stay there and be a virile topnotch person, he has got to take a vacation, because he is an American. Then, of course, there is the increased cost of education in the high grades for his children.

But I want also to state that the average cost of living down there is equal to the cost of living in Washington and we have been able to maintain that cost of living.

COST OF LIVING

Mr. HAND. What does the report show, if I may interrupt you, for the cost of living?

General SEYBOLD. I think they admit the cost of living is equal to that in Washington for the States.

DEMOLITION OF HOUSING

Mr. RABAUT. You said the program for demolishing the houses would be completed by June 30, 1958?

General SEYBOLD. Yes.

Mr. RABAUT. How many houses are you going to demolish?

General SEYBOLD. We were speaking only of the local-rate housing. Of family units, the present occupancy is 3,184 and we are reducing that to 1,750.

Mr. RABAUT. 3,184 and it is reduced to 1,750?

General SEYBOLD. Yes.

Mr. RABAUT. In the same statement you said there is a shortage of housing down there, and the housing program that had been contemplated, has been set aside?

General SEYBOLD. Yes.

Mr. RABAUT. Where are those people going to live; where is the housing?

General SEYBOLD. Well, we hope, and I am confident, that it will happen, that they will find living quarters in Panama.

Mr. RABAUT. In Panama?

General SEYBOLD. Yes.

Mr. RABAUT. They are working for you but they have got to find their living quarters in Panama?

General SEYBOLD. Yes; 60 percent in the local-rate housing—of the people working for us—live in Panama.

Mr. RABAUT. Then you said that there was some conflict about those who live in Panama going to school in the zone.

General SEYBOLD. We feel that definitely they must have their own schooling.

Mr. RABAUT. School themselves?

General SEYBOLD. Yes.

Mr. RABAUT. According to this, you are practically chasing them out of the area to relieve yourselves of schooling programs?

General SEYBOLD. That is right.

Mr. RABAUT. Is that a part of the intent or just how is it being brought about?

General SEYBOLD. It is part of the intent because these are Panamanian citizens and they should not be schooled as Americans, and the economy resulting should be in Panama. I am not saying that we may not have to increase their wages but even if we do, it will be of far greater benefit to the Republic of Panama and to the Panama Canal Zone to have them live over there; it will be better for the economy of Panama; that is what Panama needs.

Mr. RABAUT. The idea is more or less to have a smaller group of people living in the Panama Zone?

General SEYBOLD. Yes.

BOOZ, ALLEN AND HAMILTON REPORT

Mr. RABAUT. Who made this report on the housing conditions?

General SEYBOLD. That is the report called for by us, as was requested by the committee.

Mr. RABAUT. Tell us about the report; by whom was it made?

General SEYBOLD. Booz, Allen and Hamilton.

Mr. RABAUT. Tell us something about that organization.

General SEYBOLD. It was made, of course, by the consulting firm of Booz, Allen and Hamilton, following some extensive discussion, and of course with the management and the board of directors of the company. We feel that we have shown the committee, furnished the committee, with an entirely objective and independent study by the experts of this company. The management of the Panama Canal Company only furnished basic information to insure an entirely independent study by a group of consultants which was this firm sent to the zone.

Mr. RABAUT. Briefly, what are the highlights in the report?

General SEYBOLD. I can give you their recommendations.

Mr. RABAUT. Very well.

General SEYBOLD. The first recommendation was the retention of the 25 percent differential in pay. The second recommendation was to make that difference tax free. The third was, in effect, a rent reduction of 50 percent in Company-owned housing. That is a matter that the chairman began to discuss.

Mr. RABAUT. Fifty percent what?

General SEYBOLD. In Company-owned housing. The fourth was to provide free transportation to their place back home once every 2 years, to employees and dependents on leave; and once each year for employees' children in their last 2 years of college in the States; and, fifth, to retain their present status of the fringe benefits.

When the fifth recommendation was made, at that time, we had not effected the charge for hospitalization; at that time, it was free, when they said retain that.

Now, if it pleases the committee, we would be glad to have these gentlemen who made this report appear before you. I think they could be made available to come, and give such explanation as the committee cares to hear on this report which has now been furnished to the committee and the legislative committee handling Panama.

Mr. RABAUT. Who selected this organization to make this report?

General SEYBOLD. The selection was made by the management, by the board of directors of the company, the management and the Comptroller.

Mr. RABAUT. Where is this company located?

General SEYBOLD. Basically, Chicago, but they have offices here; they also have offices in New York, San Francisco, Philadelphia, Cleveland, Detroit, Minneapolis, and Los Angeles.

Mr. RABAUT. Do you know if they have made other reports for the Government?

General SEYBOLD. Yes; they have made reports for the Treasury Department, Defense, Army, Navy, Air Force, Interior, Veterans' Administration, and the Civil Aeronautics Board.

Mr. CEDERBERG. I would like to note that the figures that they furnish do not seem to reach the same conclusion as the one presented here.

Mr. DAVIS. We will try to get into that to some extent in the course of the hearings.

MOTOR VEHICLES

Mr. DAVIS. With regard to last year's report; with reference to the compliance of the request for the reduction in the number of motor vehicles. What can you tell us about that?

General SEYBOLD. We have complied with the directive of the committee. In fact, I think we had actually complied with that before the fiscal year began; I am sure, although I do not remember the exact numbers that were to be reduced, but the reduction in the fleet is 6 in the Company, and 3 on the Government side. That was the number which would be affected.

TOLLS STATISTICS

Mr. DAVIS. Turning to page 4 of the justifications, which gives us the tabulations of the tolls, we will insert that page in the record at this point. It bears upon the operation of the Panama Canal Company.

(The data referred to follows:)

Tolls statistics, fiscal years 1944 to 1953—Estimated 1954 and 1955

Fiscal year	Total revenue transits	U. S. Government vessels	Total transits	Tolls commercial vessels	Tolls U. S. Government vessels [1]	Total
1944	1,797	3,333	5,130	5,473,846	5,876,729	11,350,575
1945	2,300	6,566	8,866	7,222,656	13,171,772	20,394,428
1946	4,032	5,554	9,586	14,791,807	15,262,087	30,053,894
1947	5,107	1,265	6,372	17,642,146	2,264,513	19,906,659
1948	5,920	1,079	6,999	20,004,310	1,789,577	21,793,887
1949	6,068	1,293	7,361	20,635,016	2,461,617	23,096,633
1950	6,633	1,061	7,694	24,511,713	2,026,450	26,538,163
1951	6,706	1,008	7,714	23,958,879	2,793,811	26,752,690
1952	7,925	1,203	9,128	26,995,772	3,413,727	30,409,499
1953	8,704	1,466	10,170	31,973,209	5,557,682	37,530,891
1954 (estimated)	8,496	1,040	9,536	32,000,000	4,560,000	36,560,000
1955 (estimated)	7,812	579	8,391	29,000,000	2,540,000	31,540,000
1953—July	731	145	876	2,821,598	552,545	3,374,143
August	758	195	953	2,782,045	649,071	3,431,116
September	712	153	865	2,594,614	583,989	3,178,603
October	768	119	887	2,759,571	380,343	3,139,914
November	766	99	865	2,673,812	346,639	3,020,451
December (estimated)	778	96	874	2,946,290	343,000	3,289,290
Total	4,513	807	5,320	16,577,930	2,855,587	19,433,517

[1] Prior to fiscal year 1952 no credit was received for these transits.

BOARD OF DIRECTORS

Mr. DAVIS. Governor, what is the present makeup of the Board of Directors and will you give a statement for the record as to the membership and a brief background for each one of them?

General SEYBOLD. Yes.

(The information requested follows:)

MEMBERS OF THE BOARD OF DIRECTORS, PANAMA CANAL COMPANY

Earl D. Johnson, Chairman of the Board, president, Air Transport Association, 1107 16th Street NW., Washington 6, D. C.

Hon. T. Coleman Andrews, Commissioner of Internal Revenue, Washington, D. C., formerly senior partner, T. Coleman Andrews & Co., public accountants, Richmond, Va.

Karl R. Bendetsen, 6 Oaklawn Drive, Houston 24, Tex., executive, Champion Paper & Fibre Co., Houston, Tex.

Rear Adm. Richard E. Byrd (retired), 9 Brimmer Street, Boston, Mass.

Ralph H. Cake, 411 S. W. 6th Avenue, Portland, Oreg., attorney.

Maj. Gen. Glen E. Edgerton (retired) president, Export-Import Bank, Washington 25, D. C., former Governor of the Panama Canal.

John W. Martyn, Administrative Assistant to the Secretary of the Army, Washington, D. C.

Howard C. Petersen, president, Fidelity Philadelphia Trust Co., Philadelphia, Pa.

Matthew Robinson, Schroder-Rockefeller Banking Corp. of New York City, 61 Broadway, New York, N. Y.

Maj. Gen. J. L. Schley (retired), 2815 Dumbarton Avenue NW., Washington, D. C., former Governor of the Panama Canal.

Brig. Gen. J. S. Seybold, president, Panama Canal Company, Balboa Heights, C. Z.

Hon. Robert T. Stevens, Secretary of the Army, Washington, D. C.

PILOTS

Mr. RABAUT. With reference to page 5 of the justifications: How many pilots do you have?

General SEYBOLD. Ninety-three.

Mr. RABAUT. On what basis is their compensation paid?

General SEYBOLD. Their compensation is based on that of masters of vessels operated by MSTS.

SALARY RANGE

Mr. DAVIS. What is the usual salary range of a qualified pilot?

General SEYBOLD. I do not have specifically in mind the range—but it averages around $11,000. Some of them go up to about $12,000 or a little over.

Mr. CEDERBERG. Is that the ceiling or does it include the 25 percent?

General SEYBOLD. They are not paid the 25 percent.

Mr. CEDERBERG. They are not paid that?

General SEYBOLD. That is by agreement.

Mr. DAVIS. By whom are the pilots paid?

General SEYBOLD. By the Company.

Mr. DAVIS. There is no fee of any kind charged on that basis, for the transiting of vessels through the canal?

General SEYBOLD. That is included in toll rates.

VESSELS TRANSITING CANAL

Mr. DAVIS. What are the latest available figures you have showing the number of vessels transiting the canal?

Mr. WHITMAN. I have the figures as of January this year, Mr. Chairman; 773 ships transited the canal in January.

Mr. DAVIS. How does that compare with a year ago?

General SEYBOLD. That is higher. I am certain of that; I do not have the figures.

Mr. DAVIS. That is contrary to the trend you have anticipated, is it not?

General SEYBOLD. That is right, but we feel that the effect of Korea will be felt in the last half of this fiscal year and will go on through.

Mr. DAVIS. That will be very definite, notably in the 1955 fiscal year, and this is the basis for your current estimate under discussion before us.

General SEYBOLD. That is correct.

LOCK OPERATIONS

Mr. DAVIS. What is the basis for the increased estimated costs for lock operations?

General SEYBOLD. I think partly it is the result of an increase in some labor costs, lock security. The main charge here in 1955 over 1954, is the charge for lock operations. Those are charges against the present lock division and the operating costs.

Mr. DAVIS. Why should that be?

General SEYBOLD. Basically, wage-rate changes.

We have had, of course, to follow, for our crafts, the wages paid by the shipyards; they have received an increase in this fiscal year.

Mr. DAVIS. But these other items appear to be fairly well in line.

General SEYBOLD. Yes.

RAILROAD

Mr. DAVIS. When we get over to the railroad, on page 19 of the justification, there appears to be some decline in passenger traffic.

General SEYBOLD. That is correct, in the traffic carried.

Mr. DAVIS. Would that be competition from automotive service; is that the major problem?

General SEYBOLD. In the passenger traffc, definitely; it is bus competition on the highways. But we expect an operating margin in 1955 in the operation of the road even with this declining load.

Mr. DAVIS. I believe you told us that the railroad is about the only transcontinental means of transiting the entire Isthmus?

General SEYBOLD. The only land crossing of the Isthmus; yes.

Mr. DAVIS. Is there not a trans-Isthmian highway on both sides of the canal that is substantially within the zone?

General SEYBOLD. No, sir. There is one trans-Isthmian highway on the east side, and I would say it is substantially in the Republic of Panama. Of course that was built by American funds and is being maintained by American money. It is an antiquated road under present-day standards; and if heavier traffic—I mean if the rail-

road traffic were to move over to the road in greater and greater quantities, that road would have to be rebuilt.

Mr. DAVIS. Is there any suitable site for a highway across the isthmus?

General SEYBOLD. Yes; there is; that is, if we can utilize the railroad fill. Unfortunately, it does not have a base of the width required in crossing the lake, and to actually build a road, a highway, on the right-of-way of the railroad would cost between 6 and 7 million dollars.

Personally, I think that would be good insurance. However, I do realize that it would cost that amount of money. In which case we could solve a number of problems. We could definitely be independent of any problems that might arise within the Republic of Panama, and we could vary our cargo movement much better than by road; that is, by railroad, and at a reduced cost.

Mr. DAVIS. You do consider that as ultimately a substitute for the replacement of the railroad?

General SEYBOLD. Oh, yes.

Mr. NOBLE. It might be said that we are currently recovering our operating expenses, the operating costs of the railroad, plus depreciation on the investment, and we are budgeting a margin over and above that of $50,000 in this fiscal year, and in the first 6 months we have already recovered the $50,000. So we are really ahead of the budget on recovering that from the operation of the railroad.

Mr. DAVIS. How are you accomplishing that, as you seem to have had a deficit in 1953?

General SEYBOLD. What we have done is, we have rescheduled four trains and have made some operating benefits to the railroad by scheduling the operating runs; in other words, the crew that takes the train a certain distance takes another train back across the isthmus and we have made that shift.

Mr. NOBLE. The deficit in 1953, Mr. Chairman, is after having made the charges in general administrative expenses, where we charged some $100,000 which are no longer carried, in order to show the true operating margin, and the contribution to overhead. But if that had been in the general overhead, or if we had excluded that in 1953, an operating margin would have existed in 1953.

Mr. DAVIS. So far as the figures go, that is the explanation?

Mr. NOBLE. Yes.

Mr. DAVIS. This does not really represent any change in operating procedure?

General SEYBOLD. No, but it does show, Mr. Chairman, the fact that it is not costing us anything.

PANAMA LINE

Mr. DAVIS. On page 20 of the justification appears a statement with respect to the Panama Line. How is that service to Haiti working out?

General SEYBOLD. I think it is far beyond our expectations, Mr. Chairman. We have developed a traffic which I think is mainly due to the Haitian stop, which has resulted in a greatly increased revenue. Our passenger traffic has increased 1,425 between 1952 and 1953.

In January, just as an example, our passenger traffic—we have currently 158 passengers. The feeling that we now have is that the revenue of the Company, including depreciation for the first 6 months of 1954, is $830,000 and we expect to get large operating revenue in this fiscal year and in the next. This line really is producing a bigger change in the number of passengers and freight carried, and it is paying out.

Mr. DAVIS. You have 6-day service?

General SEYBOLD. It has proven very popular.

Mr. DAVIS. Which makes a delay of about 1 day?

General SEYBOLD. A delay of about 1 day. It might be of interest, and I think you might want this in the record: Here is a note we just received concerning traffic, which states:

January 1954, Government transit average of 1.4 per day is lowest since November 1954. Transits (not necessarily tonnage) of total commercial and Government vessels en route east coast United States and Canada, to Asia has dropped from daily average of 5.4 on December 30, 1953, to 2.7 on January 27, 1954. This is route with greatest change and looks significant.

In other words, that is the route on which the effect will be greater, but it is tending now to realize what we predicted.

Mr. DAVIS. The Panama Line continues to show a deficit from year to year?

General SEYBOLD. Only when it is loaded with the overhead charges.

Mr. NOBLE. I might modify that statement a bit, Mr. Chairman. We show an operating deficit in the statement before you. Our experience to date, based on the increased volume of the Haitian traffic, however, indicates that we will not sustain such operating deficit. The Governor had reference to charges in 1953 of general administration expenses of $43,000 against the line, but we expect, for the first 6 months of this fiscal year, to indicate a return of $172,000 over and above direct expenses, including $240,000 in depreciation. If that trend keeps up, as we believe it will, the Panama Line will be making an adequate contribution to the general corporate charges, and be providing transportation for employees, the bulk of which cost must be borne by the Company, on a very economical basis.

General SEYBOLD. I think it might be interesting to insert these specific figures which show that in the first half of this fiscal year, we have increased over 13.7 percent in passenger carrying over the past, that the gross revenue from the traffic passengers for the first 6 months has increased $204,000; that is, over the period of the last fiscal year.

Mr. DAVIS. The budget figures indicate that in the 1953 fiscal year, there was a deficit of $370,000; 1954 estimated deficit, $87,000; 1955 estimated at $131,000. How do you reconcile those figures with the statement you just made?

Mr. NOBLE. Due to the increase in traffic from the Haiti stop, which was not adequately anticipated in the budget estimate.

Mr. DAVIS. That was not anticipated in the 1955 budget estimate?

Mr. NOBLE. We had some allowance for the Haitian business, but we have actually received more than we had anticipated.

General SEYBOLD. It has just begun to show in the last few months, after the development of the budget.

Mr. NOBLE. The budget was developed in August after we had had about 6 months' experience on the Haiti stops and we did not realize the full benefits that we were apparently receiving from it at that time.

Mr. DAVIS. You feel confident that this is a pretty firm, solid increase, do you?

General SEYBOLD. I think we are still on a conservative side, Mr. Chairman.

Mr. NOBLE. The deficit in the budget in this item, Mr. Chairman, is from a bookkeeping figure, in that there is a credit to the line for employee passengers which are figured on the basis of $120 whereas the tariff is $160 to the public. If we allowed full credit of the $160 we would not have had this bookkeeping deficit.

We prefer to carry it that way because, after all, the costs would be, after we get the revenue from the Haiti stops—it looks now as though we will not have to adjust it.

General SEYBOLD. I would like also to recall the fact that there are no subsidies to this line as normal subsidies are made to any line. Just on its own with no outside help.

Mr. DAVIS. You are operating three ships?

General SEYBOLD. Yes.

HOTEL WASHINGTON

Mr. DAVIS. On page 21 appears a statement with respect to the Hotel Washington.

General SEYBOLD. I think it might be of interest to the committee to state, Mr. Chairman, that we recently have leased this hotel to a group of Panamanians to be operated by them at what we think is a reasonable and advantageous lease, both to the Panama Company and to the Republic of Panama itself.

Mr. DAVIS. How long is the lease?

General SEYBOLD. Three years with option of renewal.

Mr. DAVIS. This is a cash lease?

General SEYBOLD. Oh, yes; cash is remitted monthly.

Mr. DAVIS. What does it amount to in terms of income to the Panama Company?

General SEYBOLD. The annual base return is $32,250.

Mr. DAVIS. That has been your thinking for some time, has it not, to attempt to get out of the actual operation of this hotel?

General SEYBOLD. Yes; we have tried to get out of any business, any business interests that we have in the Republic.

AUTOMOTIVE SERVICES

Mr. DAVIS. On page 21 appears an explanation of the item "Automotive services." There has been some change in that this is being handled in a different manner. Will you tell us about that, Governor?

General SEYBOLD. We have eliminated, of course, the requirements for transportation—that is, requirements for garbage collection and disposal and the operation of the service contract we had with the Republic. This contract for these services was terminated on July 1,

1953. You will remember that at that time the collection of garbage, maintaining of water and sewage service for Panama, and also in that contributed 25 percent to the cost of that. At their request, this contract was terminated, and of course, that relieved us from some of the demands for vehicles. Likewise, we are concentrating some of our usage in various divisions and we think that we can make significant reductions in the number of the trucks which we have. This will likewise improve our productive man-hours of maintenance and repairs.

TELEPHONE SYSTEM

Mr. DAVIS. On page 33 of the justification appears an item of telephone system. There has been some change in the rates; has there not, Governor?

General SEYBOLD. I think the change in rates has been made to the outside customer, commercial, but not to the residents or employees. We likewise, in the past, Mr. Chairman, had a full appraisal made of our real-estate holdings, which are under lease, and we have increased those rates, I would say, between 40 and 50 percent.

Mr. DAVIS. Most of the users of the space would be insurance agencies?

General SEYBOLD. Shipping agencies, mainly oil—oil companies that operate the tank farms.

Mr. DAVIS. Outside of that amount, it is mostly a bookkeeping transaction?

General SEYBOLD. It is an interagency charge; that is correct.

ENGINEERING AND GENERAL MAINTENANCE SERVICES

Mr. DAVIS. On pages 34, 35, and 36 appears the item for engineering and general maintenance services. Will you explain it to us briefly, No. C on page 36, "Maintenance for the Army of the Isthmian Highway"?

General SEYBOLD. We do the work of maintaining that highway, Mr. Chairman, but we are reimbursed by the Army.

Mr. DAVIS. Completely so?

General SEYBOLD. Yes.

FRIDAY, FEBRUARY 5, 1954.

CAPITAL OUTLAY, PANAMA CANAL COMPANY

Mr. DAVIS. The subcommittee will resume this morning with a discussion of the capital outlay program of the Panama Canal Company, and, in connection therewith, I would like to ask you to insert in the record a list of the capital outlay projects with the total cost of each project, the amount that has been allocated to date on it, and then the fiscal year 1955 request in each case.

General SEYBOLD. Yes, sir.

(The matter referred to follows:)

Capital projects

	Total cost	Obligated through fiscal year 1954	Fiscal year 1955 requirements
Canal and related marine projects:			
Electrical distribution system, locks	$5,373,000	$5,130,900	$242,100
Increase capacity of present canal, phase I	1,000,000	450,000	419,000
Main culvert bulkheads, locks	69,000		69,000
Relocation of walkway, Miraflores Bridge	30,000		3,000
Buoys, beacons, and radio equipment	(1)		23,600
Launches, boats, and launch engines	(1)		18,000
Compressors, generator units, for ferryboat *Amador*	16,500		16,500
Widen portion of Gaillard cut, 300 to 500 feet	18,878,465	16,665,165	1,213,300
Replace signal stations in Gaillard cut	30,000		10,000
Equipment and water stage registers	(1)		3,000
Bases on SIP–7 and remove old dams	250,000		85,000
Minor additions and replacements	(1)		10,000
Total			2,112,500
Commercial operations projects:			
Replace freight cars	1,060,000		530,000
Engines for railroad motorcars	11,000		11,000
Dock and cargo-handling equipment	(1)		49,000
Electrical distribution system, Atlantic terminal piers	376,000		94,500
Cathodic protection, fuel oil lines	27,300		27,300
Steamship and office equipment, Panama Line	(1)		16,800
Minor additions and replacements	(1)		10,000
Total			738,600
Employee service operations projects:			
Replace commissary central plant equipment	(1)		128,300
Replace commissary retail plant equipment	(1)		31,000
Replace laundry equipment	(1)		19,500
Replace restaurant, fountain and theatre equipment	(1)		15,930
Housing construction program	22,919,911	16,524,911	1,416,000
Hoods, concrete quarters, United States rate	93,100	68,000	25,100
Minor additions and replacements	(1)		10,000
Total			1,645,830
Other supporting operations projects:			
Motor vehicles	(1)		145,300
Garage equipment	(1)		3,000
Storehouse equipment	(1)		19,500
Office equipment (pooled)	(1)		57,000
Printing plant equipment	(1)		6,100
Mowing equipment	(1)		8,250
Storage buildings, Paraiso and Rainbow City	8,000		8,000
Fluorescent lighting, industrial shops	19,800		19,800
Industrial shop equipment	(1)		26,750
Power installations, industrial shops	(1)		13,200
Paving, fencing, and minor structural improvements, industrial area	(1)		37,000
Telephone switchboards and equipment	(1)		22,000
Electric ranges	(1)		90,000
Convert power system, 25 to 60 cycle	13,000,000	100,000	2,700,000
Power feeder to Fort Amador	45,000		45,000
Substation batteries	(1)		8,000
Filter plant equipment	(1)		69,000
Filtered water service line, Miraflores filter plant	12,000		12,000
Booster water pump station	60,000		60,000
30-inch water main, Miraflores to Balboa	1,023,000	600,000	423,000
Laboratory equipment, water system	1,000		1,000
Construction equipment	(1)		75,500
Redeck bridge, Gatun spillway	20,000		20,000
Minor additions and replacements	(1)		20,000
Total			3,889,400
General corporate projects: Electric accounting machines	(1)		75,000
Total all projects			$8,461,330

[1] Continuing.

INCREASING CAPACITY OF CANAL

Mr. DAVIS. Last year, Governor, we had some discussion with respect to the proposal for increasing the capacity of the canal. Will you bring us up to date on that matter?

General SEYBOLD. That program has moved forward. We have awarded contracts for one of the items, and the main item we speak of in phase 1 of this program is 300 plugs needed and plug outlets of the tunnels to feed water into the bottom of the lock chambers.

That is a new way of cutting off the reverse flow of the water except through the valves, and the objective is in phase 1 of this program to afford means by which we can repair those valves and still operate from the water supplies on the two sides.

This contract has been awarded and the deliveries will be made about the end of this calendar year.

VENTILATION SYSTEM

The planning for the ventilation system which will be required to work down in the water tunnels is progressing, and it is expected that that portion of the work on phase 1 will be practically complete by the end of the calendar year 1955.

That is, of course, the first phase of the project.

The second phase is to provide ways and means of floating the dock gates out. In other words, to have the canal in continuous repair with only dewatering on the side of the lock at just a few intervals, and also a program of developing ways and means of navigation in the cut during the foggy period of the day and season is one which we are approaching in our studies.

BLIND NAVIGATION

The dangerous problem, of course, will be to provide blind navigation. It is conceded by everyone that this will be an extremely difficult problem in navigation, and we have consulted people like the Sperry Gyroscope Co., General Electric, and others on that.

That is one phase in which we are not ready as yet to bring forth any concrete recommendations to either the Board of Directors of the Company or to this committee as it is such a problem and it, of course, is also dependent on the needs of future navigation, or future volume which is an item that is under present consideration.

We feel that the completion of phase 1 will enable the Company to meet its obligations and the canal to meet its obligations in volume for a number of years.

I think that I can report to this committee that that work is quite satisfactorily in progress. We have a very good price on these plugs, which is something rather unique and new.

REPLACEMENT OF CULVERT BULKHEADS AT GATUN LOCKS

Mr. DAVIS. Briefly, General, what are the circumstances that require the replacement of the culvert bulkheads at Gatun locks?

General SEYBOLD. The bulkheads are required during overhaul periods to prevent the flow of water into the culverts while work is in progress repairing valves and normally submerged parts. That is a bulkhead put at the head of the culverts to allow you to dewater the culverts in the lock walls and operate there. Those have been in service since 1914 and have been repaired and rebuilt a number of times and now they are just in poor condition and we feel from the situation

that they cannot be used unless they are completely rebuilt, and we feel in order to operate with a little more efficiency they need redesigning also.

WIDENING GAILLARD CUT

Mr. DAVIS. How are you getting along with this project to widen Gaillard cut?

General SEYBOLD. That, of course, is a continuing operation. We are attempting to continue to increase the width of the cut from 300 feet to 500 feet to achieve a substantial reduction in the danger of channel closure.

The slides on the cut are still active. They are not moving too fast, nor is the quantity, at the moment, too great that it cannot be taken care of in the normal dredging and maintenance program.

However, it is desirable to increase the width of the cut so that if we should have an abnormal slide the width would, of course, take the material that comes in and leave us a clear channel. It is a safety factor.

It also, of course, assists in the improvement of maneuverability in these sections where navigation is tight. You sometimes wonder how these large ships make those very sharp turns.

It also provides greater ease in passing.

In the case of certain ships we do not allow passing. When they are headed in one direction they are given a clear right-of-way, and no ship is allowed to pass in that cut. Those are the tankers where there is danger of explosion. If we had a wider cut we would not have to do that.

Mr. DAVIS. This will be completed when, then?

General SEYBOLD. Well, I think the final completion of this particular project is the end of 1956. Now, that does not mean that the entire cut will be increased to 500 feet, but in this project it will increase a great part of it to 500 feet.

CAPACITY OF THE CANAL

Mr. RILEY. Governor, are you able to accommodate the largest ships in the canal at the present time?

General SEYBOLD. No, sir.

Mr. RILEY. Is the canal somewhat obsolete as to its size and ability to handle modern shipping?

General SEYBOLD. That depends on your viewpoint, Mr. Congressman. The locks of the canal of course, prohibit the lockage and passage of the Queens, and certain of our carriers, particularly, of course, the new ones that the Navy is building. I understand that they just would not get in at all, and also the remodeled Essex class. Anyway, certainly the carriers could not get in. As to commercial ships, yes. I think it would be interesting to you to know that the canal can take the *United States*.

Mr. RILEY. It can?

General SEYBOLD. Yes, sir.

Mr. RILEY. Would you mind explaining to us why it will take the *United States* and not the Queens. Is it due to a different type of construction?

General SEYBOLD. The *United States* beam width is about 108 feet. The Queens, as I remember, are around 118 to 120 feet. Our limitation, of course, is 110. It is due to the width of the ships. For the large volume of commercial traffic the locks have ample capacity, but these abnormal sized ships are few and far between.

Mr. RILEY. I was interested in getting that information since you are widening this canal, I wondered whether the locks would accommodate those ships.

General SEYBOLD. Our problem, of course, is, in the volume that we have at the present time, to keep every ship moving. As soon as it enters the canal that ship should be kept moving. I say it is moving when it is in the lock, being locked. In other words, it is moving, it is not tied up waiting. As it is at the present time there are times when we have to tie up either northbound or southbound ships in order to clear through these cuts and that, of course, reduces the capacity of the canal.

Mr. RILEY. When you finish working on these cuts, these ships will then be able to pass in the canal which will speed up the operation?

General SEYBOLD. It will give us a better operating factor; yes, sir.

EMERGENCY DAMS

Mr. DAVIS. Governor, describe these emergency dams at the locks, which are mentioned on page 44 of the justifications.

General SEYBOLD. The old emergency dam is really something like a turning bridge. It is pivoted on one side of the lock and in times of emergency it swings across and they trap the tunnels and it effectively closes the flow of water through the canal in the lock itself. If the lock gates should break at this dam, it is a bulkhead.

They have been in place since the locks were built. They also can be used as a spillway. In other words, if we have an enormous flood up in the Chagres and on the lake, if the spillway capacity of Madden Dam is deficient, if they do not have enough conduit, and so forth, in addition to using the tunnels of the locks the water can spill over these emergency gates without danger.

The old emergency dams need complete rewiring, and they need a great deal of rehabilitation. Since they have been there so long and no work has been done on them.

We have developed a plan that we should abandon those and take them down and scrap them. By the use of the new design and use of the SIP Dam and this collapsible baffle we can provide the flood-control regulation that is necessary and save all costs of rehabilitating the old emergency dam which is only a duplication now of the new feature which we must maintain anyway.

That is about the picture of that. It is quite a saving because the cost of rewiring the old dam would be about $350,000, and then you have not anything in the end.

The program is shown on page 46 and a breakdown given of how we plan to carry this project through the 4-year period.

Mr. RILEY. Were these new dams, Governor, built out of the earnings of the canal or did they require appropriations?

General SEYBOLD. They were defense measures.

Mr. RILEY. They were built out of defense funds?

General SEYBOLD. Yes, sir.

REPLACING OF BOXCARS

Mr. DAVIS. On page 47 of the justifications there appears an item for replacing 50 boxcars and indicates that you have a total fleet of 249 cars. It appears that you have not had any new cars of any kind since 1941; is that correct?

General SEYBOLD. Yes, sir; that is correct.

Mr. DAVIS. You have 181 cars in your fleet that go back to 1909 to 1912.

General SEYBOLD. That is correct.

Mr. DAVIS. Now, these are purely for the purpose of replacement of the oldest of your boxcar fleet; is that correct?

General SEYBOLD. Yes, sir.

Mr. DAVIS. What can you tell us about the maintenance costs on some of these that you are seeking to replace?

General SEYBOLD. The maintenance costs are increasing. We have a category known as light and heavy repairs. A heavy repair to a car costs $75. In the last 2 years the number of heavy repairs for these cars has trebled over what it was before.

Due to the maintenance the present average annual cost for the repair and maintenance of wooden boxcars is $270 compared to $80 on the steel cars. This expenditure level is the minimum necessary to maintain the cars in serviceable condition, providing they are scheduled for early replacement. If a program of repair and overhaul must be placed into effect, the cost for wooden cars will increase to between $400 and $450 per car.

I really do not know how many times the cars have been rebuilt through these years, but they do depreciate down there with rapidity, and even though we use native woods, which are supposed to be somewhat insect proof, they definitely are not.

Our rolling stock, Mr. Chairman, really is in poor condition. Our railroad coaches go back to about that period, too.

FREIGHT TONNAGE

Mr. DAVIS. In the fiscal year 1953 you carried 255,700 tons of freight. Does that amount of freight require a fleet of boxcars of the size that you are carrying?

General SEYBOLD. Yes, sir.

Of course, we have, you may say, an abnormal number at the moment that are sort of awaiting repair, but we need, approximately, I would say, around 200 at all times. It is just a matter of holding cars and having them available to the piers and the traffic that that amount would handle.

Mr. DAVIS. These new ones that you propose to get would be of what size?

General SEYBOLD. Well, standard size. It is a 50-ton steel boxcar, 40 feet 6 inches long. It is most frequently ordered and built for railroads during this period. It is a car adapted to the Panama Railroad. The only difference between that and the standard type normal car is the gage. We use a 5-foot gage instead of 4 feet 8½ inches, but otherwise it is a standard car.

Mr. DAVIS. You anticipate the cost of them delivered in Panama will be $10,600?

General SEYBOLD. Yes, sir.

Mr. DAVIS. If these are 50-ton cars you would be able to retire more numberwise of the old cars than you would put into the fleet in new cars?

General SEYBOLD. I expect we would; yes, sir.

Mr. DAVIS. You mentioned in your justifications that between 200 and 250 boxcars are needed. If all of them were of this larger type you would be able to still have the same capacity and cut your fleet down substantially below the 249 that you are now carrying?

General SEYBOLD. That is right; yes, sir.

REPLACEMENT OF ELECTRICAL DISTRIBUTION SYSTEM

Mr. DAVIS. On pages 49 and 50 there appears an item for the replacement of the electrical distribution system on the Cristobal piers and docks.

General SEYBOLD. If you remember, Mr. Chairman, that was a deferred item from 1954. We deferred that from the 1954 program, and it is just another year older. There is further deterioration now and we feel it is essential that we begin the rehabilitation of these 4 piers and schedule 1 each year from 1955 on until completion.

HOUSING REPLACEMENT PROGRAM

Mr. DAVIS. On page 51 there appears the housing replacement program. We will insert in the record page 53 of the justifications which is a tabulation concerning the financing of the revised housing program and also page 58 of the justifications which, in tabulation, sets forth the housing program.

(The matters referred to follow:)

	Budgetary authorization allowed or anticipated	Obligations	Expenditures
Panama Canal Company:			
Prior to fiscal year 1952	$1,181,814	$1,181,814	$1,181,814
Fiscal year 1952	7,256,739	6,989,224	3,007,332
Fiscal year 1953	[1] 4,131,358	3,502,186	5,895,555
Fiscal year 1954	4,055,000	4,851,687	5,182,210
Fiscal year 1955	1,336,000	1,416,000	2,451,200
Fiscal year 1956	4,959,000	4,979,000	5,201,800
Total, Company	22,919,911	22,919,911	22,919,911
Canal Zone government:			
Prior to fiscal year 1952	737,159	737,159	737,159
Fiscal year 1952	5,341,800	4,311,742	2,370,496
Fiscal year 1953	2,217,630	2,561,288	3,446,362
Fiscal year 1954	1,000,000	1,376,400	2,139,018
Fiscal year 1955	418,000	728,000	1,021,554
Fiscal year 1956	1,121,000	1,121,000	1,121,000
Total, government	10,835,589	10,835,589	10,835,589

[1] Original budgetary authorization was $7,095,200. Reduction of $2,963,842 results from (1) reduction of $2,047,000 by elimination of local rate construction at Cardenas, (2) reduction of $200,000 for replacement of Army quarters at Corozal, and (3) reduction of $716,842 in estimated obligations and/or expenditures on contract and force account work on fiscal year 1953 and prior-year projects.

Housing program, Panama Canal Company and Canal Zone Government

Location and item	Fiscal year 1952			Fiscal year 1953			Fiscal year 1954			Fiscal year 1955			Fiscal year 1956		
	Number	Company cost	Government cost	Number	Company cost	Government cost	Number	Company cost	Government cost	Number	Company cost	Government cost	Number	Company cost	Government cost
UNITED STATES RATE															
Ancon-Balboa:															
Family apartments	73	$1,077,000		24	$404,000		116	$2,088,000		59	$1,062,000		101	$1,818,000	
Sites and utilities [1]		118,000	$293,000		36,000	$89,000		206,000	$571,000		105,000	$290,000		179,000	$497,000
Diablo Heights:															
Family apartments	14	193,000					66	1,188,000							
Sites and utilities [1]		30,000	60,000					117,000	309,000						
Gatun:															
Family apartments	10	159,000					15	270,000							
Sites and utilities		29,000	65,000					20,000	40,000						
Margarita:															
Rough grading			472,000												
Family apartments	148	2,247,000											54	972,000	
Sites and utilities [1]		300,000	558,000		20,000	41,000								111,000	225,000
Utility services [2]		5,000	146,000		90,000	79,000								120,000	
Community facilities						405,000									
Corozal:															
Rough grading			276,000												
Family apartments				173	2,847,000										
Sites and utilities [1]					300,000	777,000					14,000	48,000			
Community facilities												270,000			
Utility services [2]					138,000	132,000									
Expended at summit before change in site			173,000												
Relocation existing housing					100,000										
Pedro Miguel:															
Family apartments													79	1,422,000	
Sites and utilities [1]														162,000	349,000
Engineering and inspection		388,000	276,000		170,000	164,000		166,000	80,000		47,000	43,000		175,000	50,000
Subtotals, United States rate	245	4,546,000	2,319,000	197	4,165,000	1,687,000	197	4,055,000	1,000,000	59	1,228,000	651,000	234	4,959,000	1,121,000
Total United States rate, $25,671,000.															
LOCAL RATE															
Cardemas:															
Rough grading			686,000												
Utility services [2]		110,000	156,000												

Paraiso:														
Rough grading			84,000											
Family apartments	244	1,021,000												
Sites and utilities [1]		265,000	572,000		22,000	43,000					11,000	69,000		
Community facilities						330,000					87,000			
Utility services [2]		66,000	40,000											
Rainbow City:														
Family apartments	96	392,000												
Sites and utilities [1]		95,030	196,000		8,000	16,000								
Community facilities						160,000								
Utility services		4,000	84,000											
Engineering and inspection		182,000	276,000		65,000	131,000					10,000	8,000		
Subtotals, local rate	340	2,135,000	2,094,000		95,000	680,000					108,000	77,000		
Total local rate, $5,189,000														
Annual totals		6,681,000	4,413,000		4,200,000	2,367,000		4,055,000	1,000,000		1,336,000	728,000		4,959,000	1,121,000
Grand totals		$11,094,000			$6,567,000			$5,055,000			$2,064,000			$6,080,000	

Program total, $33,756,000 (including $2,896,000 for fiscal year 1951).

[1] This item includes site preparation, landscaping, streets, sidewalks, street lighting, fire alarm systems and water, sewer, telephone and electrical distribution systems within the towns.

[2] This item covers the cost of bringing water and electrical services to the towns and necessary access highways and sewage disposal facilities outside the towns.

Mr. DAVIS. Bring us up to date on your housing program there, will you, General?

General SEYBOLD. I think I made the statement last year to this committee that the planning of the housing program was not static.

Even though we have received some criticism of the way in which it has been moving we feel that constant attention to the program and planning of this housing program will effect economies. When we started the program originally we envisaged about $80 million, but it was cut to $40 million, and we have further reduced it by taking into consideration in the housing program the current conditions that affect it.

I think I can assure the committee that as it appears now, we will not build the program in 1956; that, by reduction of the personnel, and by some utilization of some of the older quarters, which we found in better condition than was originally thought, I believe that we will not build that.

I would not like to make that as a positive assurance to you, the committee, but I am stating it as a fact that we believe that we should keep this program more fluid from year to year; and in that manner, it has been paying off a reduction of costs of the total program.

It may be that some other effects may reach the canal which may require those, but I cannot see them at the present time.

It is just a matter that, as it now appears to me, after the completion of the 1955 program, we will be in excellent shape to meet our housing obligations. That, of course, is contingent entirely on our program of no new construction funds; that is, no new construction funds for the local rate group.

Mr. DAVIS. Your justification mentioned the 100 accommodations at Gamboa for use in staging new employees.

Will you give us a statement on that for the record please?

General SEYBOLD. There are certain groups of employees, that are moving; those that are leaving and those that are coming in. Then there are times during the larger programs when we have need of housing for a number of temporary employees. But the staging process is to furnish quarters on the Pacific side for the personnel who are coming in to replace those people who have not moved out, and we need a little flexibility there to get housing ready for the new incumbents.

Unfortunately, Gamboa is a little overbuilt for our purposes and cannot be well utilized, but that is the plant we have and we cannot do very much about it.

Mr. DAVIS. Those are pretty substantial units there at Gamboa, are they?

General SEYBOLD. No; they are not. The better class of housing that we speak of up here, they are the four-family housing that was built back, I think, in the 1940's, although they are perfectly well utilized, I mean, they are good housing units, but they are not what you might say is the new standard type.

Mr. DAVIS. Where is the line of division between what you call the Panama Canal Company and the Panama Zone Government housing program?

General SEYBOLD. The Government in the housing program constructs the—I mean, prepares the sites and has the main utilities to

the house, that is, the roads and the sewers, and they have that overall utility and then the Company builds really the houses there.

Mr. DAVIS. They are not two housing programs?

General SEYBOLD. No.

Mr. DAVIS. The actual unit construction is turned over to the responsibility of the Government?

General SEYBOLD. Yes.

Mr. DAVIS. Actually, it is purely for bookkeeping purposes; there is no significance to the fact that one comes under the Government and the other under the Company.

Mr. NOBLE. Fundwise, the Government is financed by appropriations and it is carried on the Government books as appropriated funds. The Company has to repay the Government for the depreciation on those facilities. It is in the appropriation, but the Company's direct financing is out of revenue. In the end, the Company pays it all, but it is a round-about procedure which is the result of our dual setup in which the land and the sewers and the highways are considered the responsibility of the Government. The Company builds the houses, the electric system, and the water system.

Mr. DAVIS. On page 56 of the justification it is indicated that there are 59 family units at the Balboa that are to be put on sites made available by the elimination of home dwellings there now. Do those sites have the utilities installed, or what is the status of that?

General SEYBOLD. Of course, we are using those sites now which are served with streets, sewers, and water. We have found that it is necessary in placing the new types of houses on the old sites to change the exposure. The old houses were extremely uncomfortable. They all faced the wrong way for some reason or other, probably because the planning was done without much consideration to the comfort of the houses.

In addition to that, we had to rearrange the streets because we wanted to cut out some of that area through which traffic was flowing around Ancon and up toward the north, and the new planning, as is done in other residential sections, has been to cut that traffic out and, in a way, change the sites to some extent and that calls for some change in the streets and utilities, not very much but we think we will be able to make the housing extremely better, and with a great deal of improvement in the comfort in the house.

INSTALLATION OF HOODS ON EMPLOYEES' QUARTERS

Mr. DAVIS. On page 69 appears a comparatively small item, the installation of hoods on employee quarters. Will you explain the necessity for that program, Governor?

General SEYBOLD. Mr. Chairman, I cannot understand why so many years will have gone by, during which these hoods have not been built on these houses. These are concrete, 2-story quarters, and this was needed to make them actually livable, because, as it is now, without the hoods, during the rainy season, about 3 or 4 times a week, the rains drive in and people have to rush in and pull everything away, because actually these rooms are used as living rooms. And during some 30 or 40 years, these things have been going on and this just really adds livability and practicability, usefulness of a room.

Mr. RABAUT. Are these porches?

General SEYBOLD. They are actually porches, but actually they are used as a part of the house, as a living room.

Mr. RABAUT. Yes.

General SEYBOLD. These hoods are used as a protection against driving rains and these rains do drive in during the wet season with a great deal of force.

Mr. RILEY. How are they built?

General SEYBOLD. They are built in order to tie in with the house, built of tile.

Mr. RILEY. They are not built of aluminum?

General SEYBOLD. No; they are built of tile, usually.

Mr. RILEY. They are more or less permanent, are they?

General SEYBOLD. Yes, these are permanent, concrete quarters, which were built in the early days, some groups of them.

Mr. RABAUT. How many of these hoods are there?

General SEYBOLD. I do not have the exact number involved in this program. I can give that to you for the record.

Mr. RABAUT. Do you know what the unit cost is? If not, just supply that information for the record.

General SEYBOLD. Yes, I will be glad to do that.

(The information requested follows:)

The program of installation of hoods on employee quarters in fiscal year 1955 calls for the installation of such hoods on 47 apartments at an average price of $535 per apartment. In fiscal year 1953 and 1954 hoods have been installed on a total of 148 apartments.

MOTOR VEHICLES

Mr. DAVIS. There is an item of $145,300 for replacement of motor vehicles. I note, Governor, this is consistent with what you told us previously—that you do plan to reduce, in accordance with the policy of this committee, and in accordance with your own policy which you have established, the number of vehicles in the Motor Transportation Division.

General SEYBOLD. Yes.

Mr. DAVIS. What is the significance of the term you use that 185 vehicles will be fully depreciated by 1955?

General SEYBOLD. I think the significance of that is that we have, in the fiscal manner, depreciated these; that is, charged them off entirely in 1955.

Mr. NOBLE. They have been written off the books, based on their estimated service with a life of 6 years.

Mr. DAVIS. That does not necessarily mean they will not continue to be used?

General SEYBOLD. No. We only propose the replacement of 44 of them. It means that we have actually recovered the capital cost of them.

Mr. DAVIS. During the fiscal year 1955, you expect to enter the year with 560 vehicles. Now, what is your best estimate as to the number of vehicles you will end the year 1955 with?

General SEYBOLD. I would say that I think at the moment we probably are going to make a reduction of about 5 percent. I cannot give

you definitely the individual vehicles in the overall program, but that would be my estimate of it.

Mr. DAVIS. You expect that you will be down then to about 530, or somewhere in that neighborhood by the end of the fiscal year 1955?

General SEYBOLD. Yes. I do not have the detailed program before me but I know that all of the divisions are working on a consolidated program, on securing better mileage utilization of the units.

Mr. DAVIS. You would expect to get 44 during this fiscal year 1955, with a probable retirement from service of somewhere in the neighborhood of 70 or 75, something like that?

General SEYBOLD. I think maybe that is a little high. I expect about 5 percent, which I think would be about 30.

Mr. DAVIS. Yes, but I was using the figure of around 30, and you mention 44 that are to be replaced.

General SEYBOLD. Yes, you included the ones that are to be replaced.

Mr. DAVIS. What is the vintage of the car you are using now?

General SEYBOLD. Eleven years old.

ELECTRIC-POWER SYSTEM

Mr. DAVIS. On page 60 of the justification, there appears an item for the conversion of the electric-power system. Will you discuss the needs, the progress and the probable cost of that overall program, Governor?

General SEYBOLD. Yes.

This program is one which I personally am very much interested in. We found there an old 25-cycle system still in effect, and it became increasingly difficult, if not possible, to buy certain equipment for the 25-cycle system which is used in our hospitals and things of that sort; it is not being built any more. In fact, all of the equipment we now buy for the 25-cycle system is hand tailored. The last area of the 25-cycle current in the North American continent is now going out and being replaced in Ontario, where I think they have an enormous program, some one hundred million project for changing over to 60 cycle.

We have, I think, furnished the committee with the report, preliminary report, of the proposed 60-cycle conversion program and our policy of procedure with it.

We find it is becoming increasingly difficult and extremely expensive to buy equipment to meet the needs of the 25-cycle current and the armed services met their programs, in some instances, some of the requirements, by actually installing a converter to 60 cycles on the reservation.

The authority has been granted for the program and we are starting now an extensive program of reconversion of the entire system to 60 cycles.

We have had some funds which have been spent on planning in the last 2 years, $70,000 in the fiscal year 1954, budget, and in the year 1955 we will begin the first heavy obligation of the program. The entire project is estimated now to cost about $13 million. The 1955 obligation scheduled is $2.7 million and the expenditure schedule is $612,000.

The first move will be to replace or contract, rather, the generators. We are replacing three of the main generators in the hydrostation at Gatun. Those three were built back in 1914 to 1918. And the other more recent generators will be rewound, rather than replaced. We would have to replace these generators anyway, even though we were not converting to the new 60 cycles.

At Madden we intend to rewind the present generators and we will not get any new ones there.

Likewise, the supporting equipment, the transformers, and the switchgear will be placed under contract this year, so that we will have the uniformity of equipment throughout. It will then allow us to proceed with the orderly replacement of this equipment.

It is something that the canal, I think, has needed for a long time, and certainly is an economic benefit to the Company in its procurement of other electrical equipment. It is just so outmoded, with the 25-cycle type of equipment.

When the equipment was put in, at that time, there had not been the standard setup, even in the United States, of any specific type of current. The 25-cycle was adopted as being adaptable to the equipment of the locks, the slow speed, and the high starting torque. Now, the load on a lock is a very small percent of the entire load and it overshadows—it is overshadowed entirely by the other demands and our new 60-cycle current and the new type of equipment, even for that and a variety of uses, has advanced in design, so that it will not cause any problem.

Mr. DAVIS. Do you figure that the entire changeover program will take you that long to complete?

General SEYBOLD. I think 1961 is the present program date. I think that can be accelerated, and should be accelerated. There are a number of problems which we have to be worked out, of course, and we are going a little slow in handling them, and after we have finally worked out the changeover block I think then that we can expedite the program, because it should be done as early as possible for economic reasons.

Mr. DAVIS. Your designs and plans, for which you have received about $100,000, I believe, have been completed to the point where you figure you have quite a firm idea as to what the total program is going to cost?

General SEYBOLD. Yes; I think under present conditions, of course, I think it is well within reasonable expectations.

NEW POWER FEEDER TO FORT AMADOR

Mr. DAVIS. On page 62 of the justification, you have indicated a need for $45,000 for a new power feeder to Fort Amador.

General SEYBOLD. It has been found necessary to improve voltage regulation to correct the low voltage in the area. Amador is on the 25-cycle line, and the voltage drops toward the end, and due to the increased load out there, it is noticeable, even to the point of slight dimming of the lights. There are two 2,300-volt feeders which formerly served the Fort Amador area and both were required to carry the normal daytime load. A 6,600-volt feeder serves the fortified islands. This feeder cable was only partially loaded. In 1950, the voltage of the 2,300-volt system was so low, due to maximum loading of the

2 feeders and the distance involved, that the Army had great difficulty in starting an operating frequency changer which it had installed in Fort Amador. The Army also added some additional load due to conversion from gas to electric cooking and at the same time the Navy requested 300 kilovolt-amperes additional for conversion to electric cooking.

In other words, the overloading of the present feeder is over the present feeding system ability and we have to give them a new feeder line in order to meet the high voltage—in order that they can use their equipment.

Mr. DAVIS. General, will you prepare a brief statement for the next several items for the record?

(The information requested follows:)

Replacement of filter plant equipment, valves and pumps, water system (continuing project)

1955 obligation schedule	$69,000
1955 expenditure schedule	69,000

During fiscal year 1953 the water system of the Canal Zone filtered and distributed some 1,450 million cubic feet of water.

The pump stations and filter plants of the water system have been in operation since 1914–15. During this period of service, use and age have caused deterioration of many of the valves to the point where normal maintenance and repair can no longer be economically performed, and replacement of all valves as they become completely unserviceable is necessary. A program of replacement of 87 valves was started in the fiscal year 1952 with the installation of 48 valves. The authorization requested herein is for the purchase and installation of the remaining 39 of the original 87 valves.

Booster pump station, Engineers' Hill Reservoir

Project authorization	$60,000
1955 obligation schedule	60,000
1955 expenditure schedule	60,000

The rapidly increasing demand for water in the area served by the Engineers' Hill Reservoir system is at the point of surpassing available facilities for delivering water to the reservoir.

The Engineers' Hill Heservoir system is now supplied by 1 electric-powered pump through a 16-inch main which runs from Miraflores filter plant and pump station 2.7 miles to the reservoir. The single pump operates at a wet season average of approximately 20 hours per day. This means that during the dry season in peak periods the pump is unable to keep up with the demand even on a 24-hour basis. A major break in the supply line at a time of high consumption would leave the entire system in a precarious position with regard to fire protection.

It is proposed, therefore, to construct a booster pump station and connecting lines at the foot of the Engineers' Hill Reservoir at Corozal. With this, the supply to this important unit of the water system will be made adequate and at the same time gain the insurance of a separate supply arrangement, which will make possible proper maintenance of the existing system.

30-inch water main, Miraflores to Balboa, water system

Project authorization	$1,023,000
1955 obligation schedule	423,000
1955 expenditure schedule	423,000

This provides for the completion of the project which was begun in fiscal year 1954. The total project is estimated to cost $1,023,000 with $600,000 approved for fiscal year 1954 and the balance of $423,000 requested for fiscal year 1955.

At present all filtered water for the Pacific side communities of Diablo, Albrook, Balboa, Ancon, La Boca, Amador, and Panama City flows by gravity from Miraflores filter plant to the Balboa pump station through one 30-inch and one 20-inch, unlined badly tuberculated, cast-iron pipe. Although the area

served includes the largest portion of the Isthmian population and some of the most densely populated areas, the existing pipelines do not provide the needed duplication of supply since neither line alone is adequate to supply the area for an extended period. Because of the condition of the lines this is a serious problem. In the near future it will be necessary to take the lines out of service for extended periods of time for necessary cleaning, repairs, and replacements.

To provide the required additional capacity a new 30-inch water main from Miraflores, approximately 22,000 feet parallel to the presently inadequate existing 20- and 30-inch mains, to the Balboa pump station is being constructed.

Operating Expenses, Canal Zone Government

Mr. Davis. The next item, "Operating expenses of the Canal Zone government," and the amount requested appears to be $13,788,000 compared to $13,300,000 in the current fiscal year.

We will insert pages 67 and 68, which set forth the comparative tables, and page 71, which gives a different type of breakdown, in the record at this point.

(The tables referred to follow:)

Comparative summary of estimated obligations for operating expenses

	1954 estimate	1955 estimate	Increase (+) or decrease (−)
Appropriation or estimate	$13,300,000	$13,788,000	+$488,000
Balance transferred to "Capital outlay, Canal Zone Government"		−310,000	−310,000
Prior-year balance available	3,354,417	310,000	−3,044,417
Total available for obligation	16,654,417	13,788,000	−2,866,417
Balance available in subsequent year	−310,000		+310,000
Carried to surplus (Public Law 153, 83d Cong.)	−750,017		+750,017
Obligations incurred	15,594,400	13,788,000	−1,806,400
Comparative transfer to "Capital outlay, Canal Zone Government"	−2,294,400		+2,294,400
Total obligations	13,300,000	13,788,000	+488,000

Note.—The appropriation to Canal Zone Government for fiscal year 1954 provided for both operating expenses and capital outlay. Beginning in fiscal year 1955 separate appropriations for each of these categories is proposed. The foregoing table is presented for purposes of comparing operating expenses for each of the years. Table No. A is presented on the same basis for capital outlay.

Comparative listing of operating activities, showing accrued costs of each and grand total obligations

	1954 estimate	1955 estimate	Increase (+) or decrease (−)
1. Office of the Governor	$23,100	$23,300	+$200
2. Civil administration	1,015,400	1,017,200	+1,800
3. Schools	2,725,800	2,725,800	
4. Police protection	1,680,400	1,680,400	
5. Fire protection	583,000	583,000	
6. Library	73,700	73,700	
7. Courts	71,800	70,900	−900
8. Highways and sewers	731,900	723,900	−8,000
9. Hospitals	4,077,700	4,518,200	+440,500
10. Other public health services	1,098,700	1,132,700	+34,000
11. Internal security	94,000	92,600	−1,400
12. Civil defense	20,700	20,700	
13. Postal service	1,135,300	1,151,900	+16,600
14. General Government expense	640,400	645,600	+5,200
Total accrued operating costs	13,971,900	14,459,900	+488,000
Less: Depreciation (nonfund item)	−671,900	−671,900	
Total obligations (for "operating expenses")	13,300,000	13,788,000	+488,000

Costs and recovery of costs

	Actual, 1953	Estimate, 1954	Estimate, 1955
ACCRUED COSTS			
Office of the Governor	$25,867	$23,100	$23,300
Civil administration	1,093,404	1,015,400	1,017,200
Schools	2,683,515	2,725,800	2,725,800
Police protection	1,583,821	1,680,400	1,680,400
Fire protection	566,528	583,000	583,000
Library	87,913	73,700	73,700
Courts	73,769	71,800	70,900
Highways and sewers	728,426	731,900	723,900
Hospitals	4,107,730	4,077,700	4,518,200
Other public health services	1,754,363	1,098,700	1,132,700
Internal security	85,314	94,000	92,600
Civil defense	10,995	20,700	20,700
Postal service		1,135,300	1,151,900
General Government expense		640,400	645,600
Corrosion tests	2,991		
Contribution to postal funds	254,907		
Total accrued costs	13,059,543	13,971,900	14,459,900
Prior year depreciation on townsites	83,160		
Capital expenditures written off:			
Advance planning Gatun, Camp Bierd and La Boca	35,970		
Cardenas townsite	1,103,303		
Total adjusted accrued costs	14,281,976	13,971,900	14,459,900
RECOVERY OF ACCRUED COSTS			
Civil administration	245,252	293,500	293,500
Schools	929,492	1,098,300	1,093,800
Police protection	13,888	14,300	14,300
Fire protection	318	500	500
Library	3,066	3,000	3,000
Courts	59,315	53,000	53,000
Hospitals	1,087,143	1,387,300	2,204,700
Other public health services	623,846	215,900	229,000
Postal service		948,500	948,500
Total revenue, Canal Zone Government	2,962,320	4,014,300	4,840,300
Net cost of Canal Zone Government chargeable to Panama Canal Company	11,319,656	9,957,600	9,619,600

INCREASES

Mr. DAVIS. That $200 increase in your office is due to pay increase that is mandatory, Governor?

General SEYBOLD. Yes; that is really a fogy for the military assistant.

Mr. DAVIS. There appears to be a small increase in the amount for civil administration. Will you explain that, please?

General SEYBOLD. The increase there is increase for certain nonrecurring maintenance work in the administration building, and the civil affairs building, and the district court at Ancon, offset by another nonrecurring decrease in the past year of other miscellaneous Government buildings, making a net increase of around $1,100, as the big item in that.

The license section has an increase of $1,700; buildings and sites, $1,100; experiment gardens, decrease of $1,000, which brings the net increase to $1,800.

Mr. DAVIS. The item for schools appears to be identical with that for the current fiscal year.

POLICE PROTECTION

The item for police protection appears to be identical.

I would like to ask you about the matter of about 40 policemen who receive police pay and get police-retirement benefits who actually are serving as guards and perhaps ought to be paid from guard salaries.

General SEYBOLD. Mr. Chairman, that is a matter that has been discussed and considered to quite an extent. We realize the thought that you have just presented and our experience, for guards when they continue to be on one site all the time they become inured to their surroundings, and sometimes it has not been satisfactory. Utilization of the rotation system of policemen has cut down pilfering to a greater extent. I think that this is one of the items that, on its face, looks as though you might save some money, but in the end I think it is economy to carry these people on the police force.

Our police force has several dual functions. They are reserves, subject to being called in case of necessity. That, in itself, leads to flexibility in operation down there, and also as a service which is very helpful, because when the personnel can be transferred back and forth, due to vacations and that sort of thing, it does help. We do need that service.

I have gone into that matter with the Chief of the Bureau and we have come to the conclusion that actually it is an economy in the end for these people to be on the police force.

I am very appreciative at all times of having an excellent police force, we call them reserves, and their morale at the moment is just tops because I appreciate that any time they may be called out for these disturbances. The truth is that we have back of us the military, but I do not ever want to bring them in if it can be avoided.

This strength is there for that purpose and in any event, I think we are saving money by doing it.

Mr. DAVIS. It has been called to our attention, Governor, that you have about 7 police per 1,000 in the zone, that is, to about 1,000 civilians, which is about 2½ times the frequency of police found right here in the District of Columbia.

General SEYBOLD. That is right. I have been criticized about that, but I think those who criticize us are overlooking the fact that we have to include on the basis of the ratio of police, the inhabitants of Colon and Panama, because there are no fences; they can come right over into the area, in fact can filter through. I would say, offhand, and I do not have the figures in front of me, but at least 70 percent of our arrests are Panamanians and they are our problem rather than the few residents of the zone. So that any comparison in population to police, I think it is not proper in this instance.

HOSPITALIZATION

Mr. DAVIS. The next item we would like to discuss with you, Governor, is the item for hospital where there appears to be an increase in the estimated cost of $440,500. Will you explain to us the basis on which that estimate of cost is made?

General SEYBOLD. Yes. This amount, this additional amount, is required to take care of military patients which we anticipate are to be shifted from the military to the Canal Zone Government Hospital.

This will give us an additional workload, which consists of 38,300 patient-days, or an average of 105 inpatients per day and a monthly average of 3,000 outpatients.

The total cost required to carry the military patients is estimated to be $597,600 in 1955. Partial provision for cost of military patient care in the amount of $116,900 has been included in the 1954 estimates. Before inclusion of added costs for the military load, it was possible to effect general reductions in routine hospital costs in 1955 in an estimated amount of $80,200, so that the additional cost in 1955 is due to the anticipated shift of military patients to Canal Zone Government Hospital, of $597,600.

The 1954 estimates include $116,900 for this purpose. So that the net increase in 1955 is $480,700.

Included also in this item in the budget for 1955, which is very badly needed, is a provision for the interior painting of the Palo Seco Leprosarium of $40,000. That is a rather forgotten hospital down there. It is essential for the morale of that unit to have this painting, which is much needed.

We also reduced the general amount by reduction in hospital expenses of $80,200, which gives us a net increase, hospital, for 1955, of $440,500.

Mr. DAVIS. This estimate is based on the operation of which hospitals, Governor?

General SEYBOLD. It is based on the estimate of the operation of Gorgas, Colon, Corozal, and Palo Seco Leprosarium.

Mr. DAVIS. Which of those are general hospitals?

General SEYBOLD. Gorgas and Colon. Corozal is the mental hospital, and Palo Seco is the leprosarium.

Mr. DAVIS. The estimate is based on the consolidation of the general hospital in the Canal Zone area in accordance with the discussion we had last year?

Mr. NOBLE. Yes.

General SEYBOLD. The answer to your question, Mr. Chairman, is that this plan was developed when we expected a full agreement to the consolidation of the general hospital service on the Pacific side at Gorgas; with no agreement at that time, that is when the budget was prepared, having been reached for the consolidation of the hospital service on the Atlantic side, so that in this program it had been assumed that the Armed Forces would still operate at Coco Solo.

Mr. DAVIS. The figures that we have before us then do not contemplate the consolidation of the hospital service on the Atlantic side; is that correct?

General SEYBOLD. That is correct, yes.

Mr. DAVIS. In view of the action of the Appropriations Committee on this matter last year, and the rather strong statement that the committee does expect this consolidation to take place, are you in position to provide the committee with an estimate of your costs, assuming consolidation of the hospitals on the Atlantic side?

General SEYBOLD. The estimate was that we would need approximately $450,000 for rehabilitation of the Coco Solo Hosptal for civilian use and our operating expenses would be around $250,000 additional.

The need for rehabilitation of the Naval Hospital for civilians is mainly for the women's side of the hospital. They do not have the rooms built that are needed for civilian use; they are generally of the large ward construction as you normally find in service hospitals. Certain services would have to be given, particularly for the lying-in cases at the hospital.

REIMBURSEMENTS

Mr. DAVIS. Now is your figure $250,000 for operating expenses taking into consideration the anticipated reimbursement from the armed services for the care of military cases?

General SEYBOLD. That is a gross figure, yes.

Mr. DAVIS. For our purposes, we would need to have an estimate of the net figures, would we not?

General SEYBOLD. No.

Mr. NOBLE. We must repay all of our—all these funds into the Treasury. We operate under a gross appropriation basis and all recoveries go into the Treasury. The company reimburses on a net basis but the company operates on a gross basis and pays out of appropriated funds.

OTHER PUBLIC HEALTH SERVICES

Mr. DAVIS. The increase of some $34,000 in "Other public health services" reflects the need for repairs and rehabilitation of certain existing facilities, does it?

General SEYBOLD. Yes.

Mr. DAVIS. Specifically what are those?

General SEYBOLD. Those are for the rehabilitation and repairs of the Balboa Dental Clinic, the other various clinic buildings on the Atlantic side and the repair and painting to the quarantine kennels at Corozal.

QUARANTINE KENNELS

Mr. DAVIS. This item of $10,400 for repair and painting of the quarantine kennels looks quite high does it not?

General SEYBOLD. The problem of the quarantine kennels, Mr. Chairman, has been one of considerable discussion. The quarantine rules down there are that animals brought in are kept under quarantine for 4 months. That is due to rabies. Panama is one of the few countries to be rabies-free, and we are giving every protection we can to maintain that. Our dog and cat population is quite extensive, and of course you can understand but we do have to create better facilities for the maintenance of these animals, because this long period of quarantine, it is quite difficult to keep the animals in shape.

Mr. DAVIS. Is a reasonable charge made for the keep of these animals?

General SEYBOLD. Yes.

Mr. DAVIS. For the time they are there?

General SEYBOLD. Yes; we cover all their expenses.

Mr. DAVIS. Do you have a flat rate per day for each of the animals?

General SEYBOLD. Yes; I think it is about $1.25, $2.50 per day. I find it is only 50 cents per day.

Mr. HAND. General, I find myself still a little unclear on just what this hospital situation is. Last year you operated in Gorgas, Colon, Corozal, and Palo Seco Leprosarium, the ones you mentioned a moment ago.

General SEYBOLD. Yes.

ARMY AND NAVY HOSPITALS

Mr. DAVIS. What during this fiscal year 1954 has the Navy and the Army been operating?

General SEYBOLD. The Navy Hospital at Corozal and the Army Hospital at Fort Clayton.

Mr. HAND. They are located where?

General SEYBOLD. The Navy Hospital is at Coco Solo on the Atlantic side and Fort Clayton is on the Pacific side.

Mr. HAND. Are those hospitals still being operated?

General SEYBOLD. Yes.

Mr. HAND. Does the Army and Navy, up to this point, still contemplate their continued operation?

General SEYBOLD. I would say yes.

Mr. HAND. Up until now, there has not been any actual consolidation of any hospitals in the Canal Zone?

General SEYBOLD. The services have consolidated in two, I understand.

Mr. HAND. What are they?

General SEYBOLD. The ones just mentioned at Coco Solo and Clayton. I understand some years ago they did operate one at——

Mr. HAND. I am not concerned with that particularly; I am more concerned as to the immediate past.

General SEYBOLD. Yes.

Mr. HAND. Those that have been operated by the Army are still being operated by the Army; and the Navy?

General SEYBOLD. Yes.

Mr. HAND. There is no firm agreement then to consolidate any hospital facilities in the zone; is that correct?

General SEYBOLD. Yes.

Mr. HAND. We are then faced with the same situation we were last year?

General SEYBOLD. Yes.

Mr. HAND. Is that correct?

General SEYBOLD. Yes.

NET LOSS IN OPERATION OF GORGAS HOSPITAL

Mr. HAND. Now, last year, in examining this hospital question, and I am referring to the testimony beginning at page 140 of volume 1 of the hearings—we discovered that the net loss of roughly, $2,200,000, occurred in the operation of the Gorgas Hospital which was the difference between the cost, which was $2,915,633, and the recoveries, which was $720,323.

Is there any major difference between that loss in the operation of the Gorgas Hospital during the last 2 years and the present year?

General SEYBOLD. I do not think there has been any significant difference.

Mr. HAND. They are still operating the Gorgas Hospital at a loss in excess of $2 million a year; is that correct?

General SEYBOLD. We have, of course, increased the rates to cover costs to the other agencies. The employees, of course, are now charged and the new budget includes the services too. I was going to say it is shown in the new budget, which includes the services for Gorgas. It is about the same.

Mr. HAND. Do you have figures presently available to us which show the net operating loss for Gorgas, which last year was $2,200,000 approximately?

General SEYBOLD. I think we have the net operating loss of all hospitals, but not broken down in each one.

Mr. HAND. The cost of operation of the Gorgas Hospital is estimated at $3,329,800, and the anticipated recovery is $1,825,700, so the difference between those two figures is very roughly $1,500,000 which represents a continued loss in the operation of this hospital, notwithstanding the additional charges which are now being made; is that correct?

General SEYBOLD. That is correct. But I would recall that that is paid by the company and to some extent, those charges are redistributed throughout the company's structure.

Mr. HAND. But you are not attempting to say, are you, General, that it still does not represent a loss to the United States?

General SEYBOLD. No.

Mr. HAND. Certainly it means less money that you would pay into the Treasury?

General SEYBOLD. On the other hand, it would have effect on the operation of the company in general.

Mr. HAND. It would have a very beneficial effect if you did not lose that money; would it not?

General SEYBOLD. I do not believe, Mr. Hand, that if you continued a net, that that would remain such very long; that would be the cause for another revision of the tolls and so on.

Mr. HAND. I completely fail to follow you. Will you amplify on that a little?

General SEYBOLD. What I mean is this: If the entire Corporation continues—if it did continue to make a large net on its operation, that is, over its operating costs, plus the overhead, I am sure that it would be necessary to reduce the tolls, to reduce the net return.

Mr. HAND. So far as we are concerned, it does not make any difference, you mean, whether we make or lose money?

General SEYBOLD. Oh, no.

Mr. HAND. I do not quite understand you.

General SEYBOLD. I do not think that a hospital should be figured as a commercial matter; I do not think that it is run just exactly to make money.

CAPACITY OF GORGAS HOSPITAL

Mr. HAND. In the testimony last year, we learned that the normal capacity of the Gorgas Hospital was 682 patients.

General SEYBOLD. Yes.

Mr. HAND. That it had an emergency capacity of 1,170.

General SEYBOLD. Yes.

Mr. HAND. We also learned that the actual patient load, according to the figures on January 16, 1953, was only 332. The record shows less than half the normal capacity and approximately one-fourth of the emergency capacity. Can you tell us if that is still the general situation, or has it been upward?

General SEYBOLD. No, sir. At present the average inpatient load of Gorgas is approximately 300.

Mr. HAND. With a normal capacity of 682 and an emergency capacity of 1,170; is that correct?

General SEYBOLD. I think that the word "normal" was used advisedly. That is correct.

Mr. HAND. Yes.

General SEYBOLD. Of course, we have blocked off some of the facilities at the hospital.

CAPACITY AT COLON HOSPITAL

Mr. HAND. Last year we learned, with respect to the general hospital at Colon, the normal capacity was 227 and the patient load on January 16, 1953, was 86, or approximately one-fourth of the normal capacity. Are you running at approximately that same rate of capacity now, General?

General SEYBOLD. That is correct. I think all of the hospitals on the zone are generally running in that proportion.

Mr. HAND. At a fraction of their capacity?

General SEYBOLD. That is correct.

Mr. HAND. Notwithstanding that, there has been no consolidation of them?

General SEYBOLD. That is correct.

Mr. HAND. That is all, General.

CAPITAL OUTLAY, CANAL ZONE GOVERNMENT

Mr. DAVIS. The next item for our consideration is the "Canal Zone Government capital outlay." We have before us an item of $1,725,000, the details of which appear on page 86 of the justification, which we will insert in the record at this point.

(The statement referred to follows:)

Comparative summary of estimated obligations for capital outlay

	1954 estimate	1955 estimate	Increase (+) or decrease (−)
Appropriation or estimate		$1,415,000	+$1,415,000
Balance transferred from "Operating expenses, Canal Zone Government"		310,000	+310,000
Obligations incurred		1,725,000	+1,725,000
Comparative transfer from "Operating expenses, Canal Zone Government"	$2,294,400		−2,294,400
Total obligations	2,294,400	1,725,000	−569,400

NOTE.—The appropriation to Canal Zone Government for fiscal year 1954 provided for both "Operating expenses" and "Capital outlay." Beginning in fiscal year 1955 separate appropriations for each of these categories is proposed. The foregoing table is presented for purposes of comparing "Capital outlay" for each of the years. Table No. 1 is presented on the same basis for "Operating expenses."

Comparative listing of Capital projects

	1954 estimate	1955 estimate	Increase (+) or decrease (−)
(a) Housing replacement program	$1,376,400	$728,000	−$648,400
(b) Road and street replacement	400,000	343,000	−57,000
(c) Replacement and renewals of equipment	120,000	173,800	+53,800
(d) Gamboa Bridge, redecking		110,000	+110,000
(e) Rehabilitate utilities in existing school plant		82,000	+82,000
(f) Construct covered entranceways and passages, schools		30,000	+30,000
(g) Convert office building to school, Gatun		40,000	+40,000
(h) Additions and replacement to municipal systems		81,800	+81,800
(i) Protective fencing, Canal Zone and Panama border		15,000	+15,000
(j) Facilities, small animal, quarantine station		7,400	+7,400
(k) Design, stadia and fire station		44,000	+44,000
(l) Sewage disposal program, Pacific side		50,000	+50,000
(m) Miscellaneous minor improvements	20,000	20,000	
(n) Nonrecurring construction (prior year)	378,000		−378,000
Total obligations (for "Capital outlay")	2,294,400	1,725,000	−569,400

Mr. DAVIS. With respect to the housing program, we have discussed that in connection with the Company's operation, I believe.

General SEYBOLD. Yes.

Mr. DAVIS. I think we have that fairly well in mind.

STREET AND ROAD REPLACEMENT

What do you contemplate with the $343,000 for road and street replacement?

General SEYBOLD. These funds are needed to complete the road and street rehabilitation program, initiated in fiscal year 1946.

The project for 1955 is summarized as the widening of Gaillard Highway and repaving Diablo Road to Cardenas Road. This is a continuation of the rehabilitation of the main road from Panama, north along the accesses of the canal, and it ties into various locks and other communities.

It is also expected to pave the center strip between pavements, avenues, in Gamboa. When the streets were paved they left the center and now we have more traffic and it is necessary to go back and repave the center. But the main project is for the Gaillard Highway. It is scheduled for completion in the 3 years, 1954, 1955, and 1956, of which $300,000 has been appropriated for 1954.

Almost all the traffic in the zone is concentrated on one highway, that generally leads out of Balboa and Ancon area and goes northward and ties in with the Army post up through various communities into Gamboa, but the main traffic generally is from Miraflores Bridge south, because in that area we receive traffic across the Isthmus, the traffic which leads out of Panama to the west, or crosses the zone on the Pacific side; and also there is traffic that comes over from the east side of the Canal from Fort Kobe and the Army posts over there.

REPLACEMENT AND RENEWALS OF EQUIPMENT

Mr. DAVIS. Will you tell us about this item of $173,800 for the replacement and renewals of equipment?

The justification sheets set out the items in considerable detail and I believe the justifications also indicate a large number of them, and

for the replacement of existing facilities. I think it would be interesting, however, to have your comments with respect to those items which represent expansion of facilities and other items which are not for replacement.

General SEYBOLD. Generally speaking, as you have stated, those are to replace the older equipment, particularly in the schools. There is an item to purchase additional classroom aids and equipment, some classroom furniture—a hundred additional desks for primaries; 300 steel lockers and 100 combination seats and desks. We will have to take care of the increased enrollment load which we are now experiencing in the schools, as the hump of the children advance through the grades.

There is an item of $5,000 to purchase equipment for the deposit library at Rainbow City. Rainbow City is in the new establishment, located right in the community; and to replace Camp Bierd in the old section of that area, which is now being demolished, and we have to provide certain equipment at the disposal library in this local community.

The item covers largely desks, book trucks, shelves, tables and chairs, typewriters, filing equipment and similar items for about 5,000 to 6,000 residents of Rainbow City. The library, of course, is located in a public building.

I believe that covers it. The rest of the items are for replacement.

GAMBOA BRIDGE, REDECKING

Mr. DAVIS. On page 103 is an item of $110,000 for redecking of the Gamboa Bridge. Will you give us a brief statement for the record when you go over your remarks?

General SEYBOLD. Yes.

(The matter referred to follows:)

Gamboa Bridge, redecking

Project total	$114,000
Prior years	4,000
Estimated cost, fiscal year 1955	110,000

The single lane provided on the Gamboa Bridge is the sole means of vehicular access to the town of Gamboa with its installations and shops for the Dredging Division; Armed Forces ammunition storage; and cross-isthmian pipelines. A check of traffic indicates that about 1,600 vehicles use the bridge each day.

The existing highway bridge structure is cantilevered out from the side of the original railroad bridge. This structure has only a limited load-carrying capacity and it is necessary to use a light-weight roadway wearing surface in order not to exceed design loads. Maintenance of this light-wearing surface has been high, and experiments with pierced landing plank and asphaltic plank have not proved either practical or economical.

It has been determined that the only suitable and permanent solution to the problem consists of replacing the roadway decking with a light-weight open-grid type steel grating which will combine wearing surface and subfloor.

REHABILITATION UTILITIES IN EXISTING SCHOOLS

Mr. DAVIS. On page 104 appears an item of $82,000 for rehabilitation of utilities in existing school plants. Will you also put a statement in the record on that?

General SEYBOLD. Yes.

(The matter referred to follows:)

REHABILITATE UTILITIES IN EXISTING SCHOOL PLANT, $82,000

This item covers replacement of defective, wornout, or inadequate utilities in the existing school plant. The item is made up of the following three projects:

(1) Replace wiring in three schools	$34,000
(2) Replace plumbing, Balboa elementary school	30,000
(3) Replace water heater and piping, Balboa High School gymnasium	18,000
Total	82,000

COVERED ENTRANCE WAYS AND PASSAGES

Mr. DAVIS. On page 106 of the justification, there appears an item of $30,000 for covered entrance ways and passages in the schools, which appear to be necessary because of the heavy rains which are to be expected each year.

General SEYBOLD. That is correct. This is something that has been long neglected.

CONVERT OFFICE BUILDING TO SCHOOL, GATUN

Mr. DAVIS. On page 107 is an item of $40,000 for conversion of an office building to school, Gatun. Will you put a statement in the record on that, please?

General SEYBOLD. Yes.

(The matter referred to follows:)

CONVERT OFFICE BUILDING TO SCHOOL, GATUN, $40,000

Plans for local rate housing provide for the abandonment of the town of Chagres except for 60 families with some 80 children of school age. Of this number 50 can be expected to enroll in the elementary school, kindergarten through grade 6, and 30 in the secondary schools, grades 7 through 12. It is proposed to transport the secondary pupils to Rainbow City where adequate junior-senior high school facilities are available but it is considered best from an educational point of view to provide schooling for the elementary pupils at Chagres. Under this plan a three-classroom school will be required at Chagres to meet the minimum needs of the elementary pupils.

The existing plant consists of a 2-room frame structure constructed in 1907 and a 6-room frame building erected in 1927. Both structures are in very poor condition and neither fulfills requirements as to size.

With necessary alterations, an existing building located in Gatun can be utilized as a local rate elementary school for the children living in Chagres. The building is well-constructed; has good natural lighting; and, except for the outside stairs, is in good condition. However, the toilet system is unsatisfactory for school purposes and additional plumbing will be required. Alterations necessary to make the building suitable for school use include changes in partitions, installations of new partitions, installations of chalk boards, and construction of cabinets, and the like. New equipment will have to be provided because the equipment in the old school at Chagres is in too poor condition for use.

ADDITIONS AND REPLACEMENTS TO MUNICIPAL SYSTEM

Mr. DAVIS. On page 108 is an item of $81,800 for additional replacements to municipal systems. Will you give us a brief statement on that?

General SEYBOLD. That is for additions to street lighting, sidewalks, and driveways, public parking areas, and replacement of sewers and drains.

PROTECTIVE FENCE

Mr. DAVIS. Page 113 has an item of $15,000 for protective fence, Canal Zone and Panama boundary. Will you put a brief statement on that in the record at the time you get your remarks?

General SEYBOLD. Yes.

(The matter referred to follows:)

PROTECTIVE FENCE, CANAL ZONE AND PANAMA BOUNDARY, $15,000

The area along the Canal Zone-Panama boundary from a point in the rear of the Tivoli Commissary to the Curundu River has long been the scene of petty thefts, burglaries, grand larcenies, and occasionally a crime of violence committed apparently by hoodlums who frequent a jungle area just inside the Panama borders. Theft of brass nozzles from fire hoses on Company property, stripping of fittings from privately owned locomotive, and the opening of all valves on the locomotive to allow oil to befoul the area, are some of the recent depredations committed. The boundary presently is defined by a barbed-wire fence but this fence has never been effective because of the ease with which strands can be cut or spread apart and because of an opening required for a railroad-spur track. As a result apprehension of thieves and hoodlums is very difficult and reasonable protection cannot be provided. To remedy the situation it is proposed to install 1,300 lineal feet of 8-foot cyclone fence from the Tivoli Commissary to the Curundu River, With free access along the boundary cut off, the area can be adequately protected.

FACILITIES—SMALL ANIMAL QUARANTINE

Mr. DAVIS. Likewise, on an item of $7,400, appearing on page 114.

General SEYBOLD. Yes.

(The matter referred to follows:)

FACILITIES, SMALL ANIMAL QUARANTINE, $7,400

This is for improvements to the facilities provided for the quarantine, hospitalization, and board of animals. Animals brought into the Canal Zone from other countries are quarantined for a period of 4 months. The present exercise areas are inadequate and it is proposed to extend the animal runs and fence the exercise yard used by owners and station personnel exercising the animals. In addition there is no proper place for the preparation and storing of food for animals and a part of the funds will be used to provide the room required for this purpose.

DESIGN STADIA AND FIRE STATION

Mr. DAVIS. On page 115 is an item of $44,000 for design of stadia and fire station. I believe you discussed that to some extent. This is purely for design and planning money, and does not contemplate any construction money for this year?

General SEYBOLD. That is right, yes.

SEWAGE DISPOSAL PROGRAM—PACIFIC SIDE

Mr. DAVIS. Page 116, $50,000 for sewage-disposal program. Will you put a statement in the record on that, General?

General SEYBOLD. Yes.

(The matter referred to follows:)

SEWAGE-DISPOSAL PROGRAM, PACIFIC SIDE, $50,000

This project provides for the preparation of plans and specifications for the construction of a portion of the coordinated sewage collection and disposal facilities for the Canal Zone Government, the armed forces, and the Republic of Panama on the Pacific side.

The general problem of sewage disposal for the Pacific side was summed up by Greeley and Hansen, sewage-disposal consultants, in their report of 1947 as follows: "There are now 70 sewers at the Pacific side of the canal discharging

untreated sewage into the canal and the shore waters along Panama City. The resulting pollution and contamination of these waters constitute a potential health hazard which, if not promptly corrected, may cause a regrettable epidemic of disease. Remedial measures should be undertaken at the earliest feasible date.

"The existing problem is the result of a practice, common for some decades, of collecting all sanitary and storm sewage in a combined sewer and carrying it by gravity to the nearest body of water. Because of the prevailing flat grades and high intensity of rainfall in certain seasons, it was necessary to have many outfalls along all of the water courses and along the ocean and harbor frontage. This has resulted in a number of foul, open sewers, widespread pollution of the waterfront, and unsatisfactory functioning of the combined sewers during the dry season."

Preliminary plans were prepared in 1947 by Greeley and Hansen for an overall coordinated sewage-collection system which envisioned the separation of sanitary sewage and collecting it from the entire Pacific side, including Panama City and its outlying suburban areas, to one central point for treatment and disposal. In 1951 these consultants, at the request of the Republic of Panama, made a more detailed study of the suburban areas of Panama. The results of this study indicated considerable economy would be realized by the handling of the suburban areas separately rather than as a part of a single disposal system. Based on these findings, a restudy of all Pacific areas was made by Mr. Howard Gifft, sewage consultant, the results of which indicate that further economy will result from the separation of the remaining areas into several completely separate disposal projects.

The following is a brief summary of the proposed plan which it is roughly estimated will cost $9,724,000 as compared with $17,515,000 for the original unified plan with one disposal point:

(*a*) Suburban Panama divided into four separate disposal units, each with its treatment plant as recommended by Greeley and Hansen in 1951 (estimated cost, $3,680,000).

(*b*) Urban Panama City divided into separate disposal units (estimated cost, $3,559,000).

(*c*) Canal Zone and military areas along the east bank of the canal divided into three general disposal areas: (1) Gamboa; (2) Paraiso, Pedro Miguel, and Red Tank; (3) all canal and military installations from Fort Clayton to Fort Amador inclusive (estimated cost $2,485,000).

It is proposed to complete the entire program in the fiscal years 1956 and 1957; commencing in area (*c*) in fiscal year 1956. Parts (1) and (2) of area (*c*) have been handled in the separate housing programs for these towns and it is now proposed for fiscal year 1955 to prepare plans and specifications for the separation and collection system for part (3) of area (*c*) above.

Estimated cost, fiscal year 1955

Prepare final contract drawings and specifications for fiscal year 1956 construction, $50,000.

MINOR CAPITAL IMPROVEMENTS

Mr. DAVIS. Will you furnish a brief statement for the record as to what is included in "Miscellaneous minor capital improvements"?

General SEYBOLD. Yes.

(The matter referred to follows:)

MISCELLANEOUS MINOR CAPITAL IMPROVEMENTS, $20,000

This fund is to provide for small items of equipment and minor structural improvements, the need for which cannot be foreseen at the time the annual budget estimates are prepared. The sum of $20,000 has been made available each year, beginning with fiscal year 1952 and through fiscal year 1953, the amount provided has been sufficient to meet requirements. Until further experience demonstrates the need for a change in amount the sum of $20,000 will be requested each year. Items for which the funds were used in fiscal year 1953 include rewiring in Cristobal High School, some improvements to quarantine kennels, construct and equip playground at Rainbow City, and purchase of oxygen tents and cardioscribe for the hospitals.

FRIDAY, FEBRUARY 5, 1954.

BOOZ, ALLEN, & HAMILTON REPORT

Mr. HAND. General Seybold, the committee proposes this afternoon to discuss the report of Booz, Allen & Hamilton in connection with the analysis of salaries and compensation and additional compensations both direct and indirect, to our people down in the Panama Canal Zone. This report was brought about by reason of the Senate committee's suggestions made last year that there ought to be a study made of these additional direct and indirect compensations.

May I ask you first, sir, the cost of this survey?

Governor SEYBOLD. The contract cost was $25,000.

Mr. NOBLE. That is the fee. The travel expenses were in addition.

Mr. HAND. How much were they?

Mr. NOBLE. Approximately $5,000.

Mr. HAND. So the total cost was about $30,000?

Mr. NOBLE. That is correct.

Mr. HAND. The report contains an outline of certain specific recommendations. Can you state those for me, or can you refer to the report so I can get it in the record?

Governor SEYBOLD. The specific recommendations, sir, are that—the report recommends 5 items; 1, to retain the 25 percent differential; 2, to make this differential tax free; 3, effect a rent reduction of 50 percent in company-owned housing; 4, provide free transportation to their stateside homes once every 2 years for employees and dependents on leave, and once each year for employees' children in the last 2 years of college in the States; and 5, to retain the present status of other fringe benefits.

With reference to A, the report was written prior to the imposition of hospital charges to employees.

Mr. HAND. Will you state for the record, General, the conclusions of the report and your own conclusions, if they are any different, as to the cost of these recommendations, first to the Canal Company, and second to the Federal Government?

Governor SEYBOLD. I think I can best answer that, sir, by giving the action of the Board of Directors of the Company.

Mr. HAND. Would you mind first putting in what the report says about the cost, and then tell me if you and your Directors differ with that, essentially?

Governor SEYBOLD. No, sir. As far as the cost is concerned, we have not done that.

Mr. HAND. The report says in the letter of transmittal that they estimate the cost to the company of about $1,842,000.

In reduced rentals and transportation charges, there will also be a revenue loss to the United States Treasury of about $1,062,000 in taxes.

Goxernor SEYBOLD. That is based on the present force and the present level of operations.

Mr. HAND. That, of course, does not attempt to say what the costs are, either to the Company or to the Government, as a result of continuing the various fringe benefits which are now in effect?

Governor SEYBOLD. No; that is right.

Mr. HAND. So it is fair to say, I guess, that the report not only disagrees with the preliminary study of the committee of last year, but goes off in an entirely opposite direction, is that not so?

Governor SEYBOLD. I don't know exactly what you refer to as the preliminary study. I know it was the thought of this committee to reduce the benefits.

Mr. HAND. The report indicates they should be increased, rather than reduced, particularly with respect to a reduction of rentals?

Governor SEYBOLD. Yes.

Mr. HAND. To go back to the system of not imposing Federal income taxes on their compensation?

Governor SEYBOLD. No, not entirely. This refers only to the income tax on the differential.

EFFECT OF REPORT RECOMMENDATIONS

Mr. HAND. What, in your opinion, and in the opinion of your Board, could we expect in the way of tangible benefits if this report were adopted?

Governor SEYBOLD. Mr. Congressman, I can sum up my feeling and I can speak for management, and then I can give you the recommendations for the action of the Board.

I would like to state from the management viewpoint that we feel this is definitely a comprehensive and independent report. They arrive at a solution, just as you and I would arrive at a solution, where we agree in principle, and in the end, but which we would not have approached the way the consultant did. In general, the results in total, management definitely agrees with, but not specifically with 50 percent, and the free transportation in such way.

Management of the Company looks upon this problem of compensation not as a balance between the amounts that an individual in a like job in the States has to pay or maintain himself, as contrasted to the zone. It just isn't such a balance. It is deeply involved in the Company labor policy, which has been to pay realistically to all employees, both the United States and the indigenous employees, but to reduce those employees to an absolute minimum to do the job.

In other words, there is no fat. If there is, we haven't got to the area where we can cut that out. But we must maintain the morale of a working force. We are trying in every was possible to reduce the replacements for permanent force. We want to cut out the cost of recruiting; we want to cut out the cost of training, and the cost of moving people back and forth from the canal, which is, per person, I imagine, $2,200 to $2,500 per person, on your changes.

Our basic wage scale is based on the United States base pay schedules. These schedules are not the highest based in the United States nor the lowest. They vary as they vary in the United States. The difference between the two reflects in what the report calls a condition of work. In other words, in order to maintain our working force down there, we have to take into consideration the conditions which the worker has down there and which he has here.

I want to assure this committee, contrary to some of the statements I have heard—I am sure that the individual committee members heard, here—there are no employees, and I say no employees, in the Canal Zone who are living a lush life. It is a very mediocre, average life. There are no high spots in it. Their recreation is below the average, and all of that, so that this feeling, Mr. Congressman, that I meet all

the time that these people have the great advantages and all of that, isn't borne out. It isn't borne out by their living.

Mr. HAND. Essentially, General, these differentials in compensation, both direct and indirect, are for the purpose of improving morale of your employees, is that correct?

Governor SEYBOLD. Maintaining the morale. Right now it has to be improved, and we hope after we improve it that we can maintain it, but the first step is to bring it up.

MORALE OF EMPLOYEES

Mr. HAND. Now, on page 4 of the letter of transmittal, the report says, "His morale is very low," referring, of course, to the employee of the Canal Zone.

What tangible evidence can you give the committee that that is the prevailing situation, General?

Governor SEYBOLD. Well, the tangible—it is very real. Whether I can display before this committee the tangible evidence, I don't know.

In the first place, the turnover rate, of course, has greatly increased over what you might call the precorporation days. I know that can be challenged in the fact that in those days the Canal Zone employee had everything, as compared to his brother in the States. I am not sure that that is entirely right, but this table there shows the increase in the later years since the effect of the corporation activities moved in has been on the turnover.

I would expect, Mr. Congressman, that a turnover of somewhere around 7 percent or something along there—6 or 7—would be expected under really good conditions. I mean, there are certain people who just want to move back and forth and you can't change that.

I do think that presently it is out of line.

TURNOVER OF PERSONNEL

Mr. HAND. Now, General, if we take the years from 1934 to 1940, which is exhibit 6 of this report, we do find what seems to me to be a very low turnover. If we start in with the year 1947 and take that to 1953, we find a difference, but a fairly level difference. That is the postwar years as against the war years or the prewar years, is it not?

Governor SEYBOLD. Well, forgetting the war years themselves, from 1939 through 1945 and 1946—I think you should just drop those out of the record because of the turnover, the operations there, and so on, and I don't think they are indicative of anything.

Mr. HAND. Let us look at some of the detailed figures from 1947 through 1953 which are included in the report. The turnover in 1947 was 16.90. When I say "turnover" I mean voluntary terminations of employment. They go down in 1949 to 11.39. In 1950 they reach a very low figure of 9.10. In 1951, which I take it was the result of the first imposition of income tax, it reaches the point of 18.86, but after that shock is absorbed, in 1952 it again goes down to the point of 10.87, and in 1953 it is 12.47.

Now, from the experience the committee and I have had with turnover in Government employment, how do you think that those figures compare with turnover figures generally in Government employment, for instance, right here in the District of Columbia?

Governor SEYBOLD. The only thing I can say on that is that the District of Columbia has a mass of employees who are in the relatively low grades, and they are moving. The GS–3's and GS–4's, and that, that group of employees moves far more rapidly than the average comparable employee of the Canal Zone, so I do not think that that effect is shown in the turnover rate of the Government of the District.

Mr. HAND. Don't you have low-grade employees, too, among the mass of your employees?

Governor SEYBOLD. Not too great an extent. There are really few United States grade employees in the comparable grades of GS–3 and below. Even GS–4. Those are the jobs which are beginning to be taken by the local rate's top group.

Mr. HAND. Now, General, what would be your opinion as to the 1953 current figure of voluntary termination of employment, of 12.47, with general termination of employment in other Government agencies throughout the United States?

Governor SEYBOLD. To my knowledge, I think that is high.

Mr. HAND. You do?

Governor SEYBOLD. Yes.

Mr. HAND. How does it compare with the turnover among the Navy employees in the Zone?

Governor SEYBOLD. I wouldn't be familiar with that, sir.

Mr. HAND. Well, the report indicates it.

Well, I suggest for the record that it is about 30 percent. We will put that in accurately.

According to page 62 of this same report:

Among United States citizen employees of the Navy, for instance, voluntary termination rates among various employees in the zone ranged between 21.7 and 30.5 during the six fiscal years 1948–53.

Governor SEYBOLD. They have been reducing the scope of their operations, and I would expect that the employees who are there voluntarily get out ahead of a forced reduction.

Mr. HAND. I can't guess at that, but there are voluntary terminations in the Navy. I suggest further that if we were to get a record of other voluntary terminations in other Government services, we would find it roughly comparable.

Now, General, this report says in its transmittal letter:

Quits have been running at almost triple their prewar rates.

I see no justification for that statement in the record. Prewar rates, 1934, 7.28; 1935, down to a low of 4.35; 1938, 5.68; the last prewar year, 1940, 6.64; the current year, 12.47. It isn't worse than double. And to find any triple figure, you have to go to the income-tax year of 1951.

The only reason I make a point of that discrepancy is because it seems to me that throughout this report we find some exaggeration of the recommendations and the report from the stand-point of the employee.

ADDITIONAL PAY FOR EMPLOYEES

Now, the report further goes on to say:

Other employers, including some other Government agencies, are providing their employees in the area with net earnings ranging from 47 to 74 percent over the earnings of their stateside counterparts.

What other Government agencies are doing that, General?

Governor SEYBOLD. I think they refer to the Department of State. The benefits that accrue to the Department of State are greatly in the nontaxable portion of their pay.

Mr. HAND. Now, to total, in a sense, the recommendation of this report, I refer to page 5 of their letter of transmittal in which they flatly recommend that we increase the extra compensation, both direct and indirect, of these employees to the point where the net earnings will exceed those of his stateside counterpart by 42.3 percent.

Do you and the Board concur with that, General?

Governor SEYBOLD. The Board generally concurs with the summation of the recommendations of this report, that is correct.

Mr. HAND. Do they concur that the differential should be as much as 42.3 percent?

Governor SEYBOLD. Only if a number of these other items of fringe benefits were removed. That is, the total summation of the differential, including all benefits.

TEMPERATURE AND HUMIDITY CONDITIONS

Mr. HAND. Now, referring very briefly to one of the principal factors, if not the principal factor in the argument that these extra compensations should be provided, we find the table referring to temperature conditions and humidity conditions. While I think it is fair to state that the all-year-around temperature of the zone is high, on the average, and the humidity is high, I call your attention to the fact that a mean temperature of 80, in Balboa Heights, and a mean temperature of 75 in the city of Miami is roughly comparable. Also humidity of 83.6 in Cristobal compares to a humidity of 72.8 in Miami, and I suggest that Miami, in spite of that close comparison with the zone, certainly appears to be one of the more favored spots in the United States to live.

Do you have any comment to make on the fact that the temperature and the humidity between the Canal Zone and the very popular resort city of Miami are roughly comparable?

Governor SEYBOLD. I think the difference there is in tenure of stay. I think all of us like to go to Miami during the wintertime, and in the summertime; I think it has shown the effects of the grandest advertising campaign that has ever been put on to entice people to go, largely, you and I know, in the summertime, and stay on those beaches and swelter. That I can't understand, but it is a temporary thing.

Mr. HAND. Are you familiar with the fact, General, that the summer business in Miami has come within almost 10 percent of the winter business?

Governor SEYBOLD. Yes, sir, and I think that is the strangest thing that has ever been done.

There is a difference of 10 percent humidity points between Balboa and Miami.

However, I think that the report approaches this thing—at least in our minds—with the fact that a combination of all of these elements entering into a tropical climate, where the employee is confined—he can't move around, he has to stay in one place—that that actually affects him.

I am sure that if the committee had the testimony of the competent medical personnel that that could be definitely shown here. We are laymen in that line, and all we can say is that we know it affects us, Mr. Congressman, and we think it does all the employees.

Mr. HAND. One more comment on the climate. I note with interest—and this is of local interest to all of us—that in June, July, and August—particularly in July, where it reaches almost an identical temperature, it is roughly comparable with that of the District of Columbia.

Governor SEYBOLD. As I say, I think you can pick those items out. The District of Columbia has a great deal of air conditioning and I don't know of one room down there that is. There is just no relief.

Mr. HAND. The statement says on page 12, in this same area, that—

employees were almost unanimous in their dislike of the zone's climate and their nostalgia for the bracing effect of seasonable changes in the States.

How does that statement compare with the rate of quits?

Governor SEYBOLD. Well, the definite statement may not be exactly in comparison to this line of quits, but if I may say this, you realize that once established there for whatever reason, it is very difficult for an employee to leave. He has a family. They are in school. It costs money. His opportunities for jobs and finding a place to go are not so that he actually stays at times, but doesn't like it, but for those reasons he can't relocate himself.

Mr. HAND. Can you put your finger on any economic value of this "nostalgia for the States"? Is there any way to put your finger on that?

Governor SEYBOLD. No, sir, they are in the area, Mr. Congressman, of intangibles, which are indefinite, but like all intangibles, you can't say they are worth something.

Mr. HAND. I am glad to hear you say that, because that is obviously true. The State Department was able in another part of this report to reduce those intangibles to a definite percentage figure. Do you know how they do that?

Governor SEYBOLD. No. I wish I did.

Of course, we must maintain this working force. Our experience with the canal through the years, and I may say our own, since we have been there, is that this is about the minimum with which we can maintain a reasonable, well-contented group. Now there are always means, of course, of meeting a labor problem. I have seen it, and I think you are fully familiar with it, that in many cases when there are projects built outside the United States, they immediately upgrade, so that you do the same thing in a different manner. Now, that is one method of meeting this problem, which the management of the Panama Canal certainly has not adopted. We don't believe in it and until we are absolutely forced by circumstances, we are not going to give in.

Mr. HAND. General, let me put in the record, if I may, at this point, this evaluation I referred to by the State Department, which is found on page 12 of the report, and I quote:

The United States Department of State has evaluated the climate in Panama, according to its point rating system, which is used in evaluating climates in countries throughout the world.

Under that system, a rating of 14 points assigned to zone climate is equivalent to 4.3 percent of an employee's base salary.

NECESSITY OF VACATIONS

Now, continuing with the report, General, the statement is made that vacations are essential and necessary, with which I fully agree, and it says:

Vacations taken not oftener than every other year.

Why aren't they taken oftener than every other year?

Governor SEYBOLD. The actual reason is that they don't have the money.

Mr. HAND. It costs $80 to go to the States by steamship.

Governor SEYBOLD. Mr. Congressman, that is perfectly true, but in order to make a trip to the States and stay any length of time, these people have to make a place for themselves, and when they get off that steamship, the costs mount up for a family of 4 or 5.

Mr. HAND. Isn't that the same situation with any continental family who takes a vacation?

Governor SEYBOLD. They don't have to take the length of vacation that they do in the Canal Zone in order to recuperate. I think the average length of vacation is far different in the States as it is against this physical feature with which we are faced.

Mr. HAND. I wouldn't be inclined to agree with that, General. I wouldn't want to be argumentative about it but, of course, the leave given to Federal employees in many countries is now at least 30 days. It is my experience that in many cases the entire leave is taken and spent on vacation.

The shortest vacation of which we have any real knowledge, any more, is at least 2 weeks. That is lengthening every day. Resort figures will show that. I think it is roughly comparable. There is certainly ample leave provided for them, isn't there? You have a very generous leave policy, which I think is proper. Forty days a year, or something like that.

Mr. NOBLE. That is sick and annual.

Mr. HAND. That is a generous policy, and probably a very proper one.

Governor SEYBOLD. Yes, sir. We think it is desirable.

DETRIMENTS TO ZONE EMPLOYEES

Mr. HAND. Now, going on with this report, which is of great interest to all of us, and speaking of other detriments for which the zone employees should be compensated, it says, "The zone employee foregoes television." That is obviously true, and it is a detriment, I presume. Is it a detriment which is any greater than that in extremely large areas of continental United States where television does not yet reach?

Governor SEYBOLD. I would expect, Mr. Congressman, that there are very few large areas in the United States that television doesn't reach or won't, within a very short time.

Mr. HAND. I don't know about what the future holds, but I think we all know that a fringe area from a television station is 50 or 60 miles, and from that point on, reception is either nonexistent or unsatisfactory.

I do not compare the person in the zone with the resident of the great urban area. However, this report does. The next thing is that they are deprived of big league baseball.

A great many sections of the United States, including the entire West, are deprived of big league baseball, are they not?

Governor SEYBOLD. That is correct, but on the other hand, there is nothing to take its place. There are no spectator sports. I know the report picks out a number of items—I think they speak of a zoo. I know the number of times anybody around this table has been to the zoo is probably very small.

Mr. HAND. Can't we say that factor is just slightly ridiculous, to say because they haven't a zoo that they are facing a detriment?

Governor SEYBOLD. No, sir. I think the report uses specifics to generalize the problem. Of course, if anyone takes the specifics, they themselves don't stand up 100 percent all the way through; we recognize that. But the thought is definitely right.

Mr. HAND. Well, the point that they are making in this whole paragraph, General, if I may say so, is that they are comparing life, or seeking to, in the zone, with urban life. They say, for example, next after this comment about big league baseball, that they lack first-class theaters. Are there 10 cities in the United States that have first-class theaters, if they are talking about the legitimate stage, which I assume they are?

Governor SEYBOLD. The pictures down there, of course—they have a number of all the first runs, but they don't generally meet the quality.

These people mostly, I believe it could be said that if they were in the United States, they would be urban dwellers, because we have no agricultural people, as such, in the zone.

Mr. HAND. That is a pretty broad assumption, General, if you forgive my saying so, if they were here, that they would be urban dwellers.

I don't think that necessarily follows. The paragraph refers to lack of art exhibits and symphony concerts. Do you think they really feel the lack of symphony concerts?

Governor SEYBOLD. I think they feel the lack of cultural outlets.

Mr. HAND. You can't support a symphony concert in the United States by the people who voluntarily go and pay for it. So far as ordinary entertainment and facilities of that character are concerned, is there any major difference between the life in the Canal Zone and the life in any nonurban section of the continental United States?

Governor SEYBOLD. Well, there is, only it is difficult to describe. There is in the effect of the freedom of movement. I would admit that these folks can go to picture shows. They can have a basket picnic. They can have this same thing. However, they are so limited and restricted in that movement. These things such as spectator sports, the concerts, and things of that sort; they are lacking. Of course, I can't give any economic equivalent to that, because again, I say our viewpoint is that we feel that this is a necessity to maintain our labor and working group.

Mr. HAND. Now, the report refers to the fact that they have no vote, or no representation in Congress, except by absentee ballot. That is an unfortunate thing, but it is exactly comparable to the situation in the District of Columbia, isn't it, so far?

Governor SEYBOLD. Well, people don't like it.

Mr. HAND. Well, the people at home don't dislike it too much, because we are lucky if we get 50 percent votecasting out of the registered voters.

Governor SEYBOLD. That is a field, Mr. Congressman, which I can't get into.

Mr. HAND. This is completely petty and meaningless, but just as an indication of the kind of thinking that goes through this report, it seems to me. There is reference made on page 15 that—

He is limited in the brand of cigar he smokes.

Is that so?

Governor SEYBOLD. Yes. We can't carry all the brands. That element is true in all our commissary supplies. The items for resale in the commissary are naturally leveled at a mean, and we can only, in a way, furnish the very, very medium group of necessities. He can't go down to a store like Woodward and Lothrop's.

Mr. HAND. I am talking about cigars, now, General.

Governor SEYBOLD. All right. A cigar store on F Street. He goes through and he sees about 3 or 4 brands, because it is a limited selection.

Mr. HAND. I can't go to Woodward and Lothrop's, either, except when Congress is in session. I don't have any Woodward and Lothrop's in my small town.

Governor SEYBOLD. I agree with you. I live in Topeka, Kans., and the zone commissary is in no way comparable to that.

SATISFACTORY ZONE LIVING CONDITIONS

Mr. HAND. Let me compare this general statement with some of the specific things we have been discussing.

I quote from the bottom of page 16 of the report wherein the report says:

Over the years, a remarkably successful job has been done to provide community resources in the zone which compare favorably with those in the States. To the casual observer, zone living looks quite attractive, and employees and ex-employees agree that zone living is just as satisfactory as stateside living in many ways.

Can that be reconciled with the other criticisms in the report?

Governor SEYBOLD. I think so, yes.

Mr. HAND. Would you like to reconcile it for me?

Governor SEYBOLD. Again, we are generalizing, here, as you realize. We do have the ballgrounds and the fact that people can play ball has, of necessity, encouraged recreation. I think this: that is an item which our enlightened Armed Forces have gone into more and more and more. Realizing that when a group is isolated, something must be given to them to take away from that atmosphere that they have in the United States, whether they live on the farm or somewhere else.

The canal recognized this necessity of providing what it could along those lines. Here, again, is a field that has, may I say, perhaps perforce, been contracted in the last few years due to the fact that we have had to pull in some of these recreation benefits that the group got prior to a reorganization due to certain effects.

Mr. HAND. General, let me quote another section of the report. This is on the beginning of page 17. I think if we can take this at face value, we can limit the problem here very severely, perhaps. I quote:

For instance, with the exception of climate-imposed heat, working conditions on the job are well regarded by 3 out of 4 employees, and by 6 out of 7 ex-employees. Sanitation, community layout and facilities, ground-keeping, most

public services and utilities, and participant sports and motion pictures are similarly regarded.

Now, forgetting for a moment the disadvantage of the climate, how can we reconcile that statement, that the employees, themselves, think living conditions are good there?

Governor SEYBOLD. That is stated as working conditions. The working conditions are, but I don't think that may be entirely applied to all living conditions.

Mr. HAND. That is possibly so, but these are working conditions they are talking about. The climate and so forth are parts of the job. That is why we are talking about providing additional compensation, because all these working conditions are affected by this overall situation. And yet, with the exception of the climate, a very high percentage of the present employees, and an even higher percentage of the former employees, regard conditions as comparable to the United States and are regarded as favorable.

Governor SEYBOLD. Only in these certain features of sanitation and layout.

I think that same effect is shown by the operations of our very large corporations overseas who do exactly the way we do only go to greater extents and great expense in trying to set up surroundings for their employees, and yet at the same time, you will find that their pay to employees is a differential over the United States rate and it is far greater than the Panama Canal's. In other words, it is the same problem that strikes their labor force as it does ours. I know that their facilities, cities, and layouts and all the recreational facilities they provide are far greater than ours.

Mr. HAND. General, throughout this report, and throughout the interesting statistics which are in it, there is a marked and sometimes a diametric difference in the attitude of those who have terminated their employment and who apparently wish they were back, and those who are still there. For example, the report says that the employees see disadvantages in zone living which are not so apparent or held not to exist by people who have voluntarily terminated within the past 2 years and which are flatly contradicted by people who have been retired for a period of several years.

In other words, when they get out, they want to get back, and when they are there, they want to get out, is that it?

Governor SEYBOLD. I think when we leave a place and have gone for a while, particularly people who have lived in that area during their productive years, look back upon a place and think only of the pleasant things.

Mr. HAND. Let me call your attention to the fact that these same figures, or almost the same figures, are indicated by those who have only been gone for a couple of years. Their memories must be fairly fresh.

Governor SEYBOLD. I think the same thing holds, and in all probability maybe the report was weighted on the oldtimers to a greater extent than it was on the younger ones.

The conditions were different in that time and I think it is more of a nostalgic result than reality.

Mr. HAND. The report indicates generally that there are other disadvantages, of course, besides the climate and things that we have been discussing, among which one of the principal disadvantages is, the report says, medical care. Is there anything wrong with the medical care in the Panama Canal Zone?

Governor SEYBOLD. I have seen that in the report. Outside of the fact that our doctors are overworked, that we haven't enough to meet the load for several reasons—and one is, of course, the desire to cut our expenses to the bone—I think that the medical attention has been good. However, there is that effect of the shortage of personnel.

Mr. HAND. A shortage, General, which I suggest exists with respect to doctors, nurses, and dentists almost everywhere in the continental United States. Do you think that is so?

Governor SEYBOLD. Well, I am not familiar with the recent conditions up here, as I am sure you know. The comptroller reminds me of one thing. I give you this as being in the minds of the individual employees, that they haven't a right to choose their doctor. Now, that would appear to be very minor. Whether or not we, here, can say he is right or he is wrong, we must take the conditions as they exist and as they are, and as they affect the company.

Sometimes false ideas greatly influence something, even though it may be somewhat wrong in its approach.

Mr. HAND. That is what we are really trying to get at; how many of these things are ideas in the minds of the employee and how many are actual facts which are detrimental to their working conditions.

Governor SEYBOLD. I feel that, taken as a whole, this report is an accurate showing of all of those conditions.

Mr. HAND. In connection with that, I can't help but refer to the fact that again when they get back to the States and make comparisons of similar crowded conditions among our doctors, limited nurses, and so forth, that 5 out of every 8—and that is not as much as half—present employees believe that medical and hospital services in the zone are not as good as those in the States, but the opposite opinion is held by 12 of the 13 retired employees and 8 out of 11 employees retired in the last 2 years.

When they get back here, they change their minds, don't they. General, according to the report?

Mr. WHITMAN. I would like to say something about that because I feel very strongly about this particular point. I was in the zone for 8 years and I have lived in the United States since that time for about 6 or 7. The contrast with medical care available in the United States was one of the prime reasons for our leaving, and on that score, we frequently have congratulated ourselves because we did come back here where we could get what we regard as better medical care.

Mr. HAND. May I ask you, sir, in that connection, where you now live in the United States?

Mr. WHITMAN. Yes, sir. Kensington, Md.

Mr. HAND. How far is that from Washington?

Mr. WHITMAN. About 9 miles.

Mr. HAND. About 9 miles from one of our great urban centers?

Mr. WHITMAN. Yes.

Mr. HAND. And 40 miles from Johns Hopkins, in Baltimore?

Mr. WHITMAN. To which we have not resorted, I might say.

Mr. HAND. Again, we are comparing, I respectfully suggest, conditions in urban United States with conditions elsewhere.

Governor SEYBOLD. Well, Mr. Congressman, would you compare the small towns of the Middle West with the zone when the people there are definitely either of the industrial type or the urban type?

Mr. HAND. I refuse to make a comparison as far as I am personally concerned, gentlemen, between general conditions in the zone and urban conditions in our large cities. There is no comparison. Some people like urban living and some people don't. Urban living has great facilities which don't exist in the Canal Zone and don't exist in nine-tenths of Kansas and don't exist even in southern New Jersey, where I have the privilege of living.

Governor SEYBOLD. I don't know, that is good country down there.

Mr. HAND. It is good country, but we don't get any better medical attention nor nearly as cheap.

Mr. WHITMAN. I also came from a small town, and in my opinion, we got better general medical attention there than we get in Kensington, Md., or than we got in the Canal Zone.

Mr. HAND. One attempt to exaggerate this is the following language:

> Bed occupancies does not reflect overcrowding. This is in hospitals. There are no outstanding lists of patients awaiting hospital admission.

The truth is that hospitals are occupied to only about one-half of the capacity. Is that not so, General?

Governor SEYBOLD. The staffs are not up to full capacity.

LIVING QUARTERS

Mr. HAND. We now turn to a reference made to living quarters. "Living quarters are exposed to outside view." What does that mean, General?

Governor SEYBOLD. In order to get full ventilation, we have had to open the houses up. They haven't the closed-in effect of the houses here, due to climatic conditions, and the feeling is—and rightly so—living on the porches or patios and things of that sort, that they do lose privacy, and there is no question about it. There is a loss of privacy.

Mr. HAND. Is there any resort made through various types of screening, including drapes, venetian blinds, and things of that sort?

Governor SEYBOLD. When you do that, you cut off the circulation, too. They do resort to those things, of course, but I do know of that feeling of loss of privacy that prevails.

RECREATIONAL FACILITIES

Mr. HAND. I note reference to the fact that you are lacking in public parks and picnic grounds. It that so?

Governor SEYBOLD. They are not as numerous, and the fact of it is, of course, that you like a little choice. They can go to one up on Madden Rose and then they can go to the same one again.

Mr. HAND. There is only one swimming beach?

Governor SEYBOLD. That is correct.

Mr. HAND. It wouldn't be difficult to provide others, would it?

Governor SEYBOLD. Yes, it would.

Mr. HAND. Why?

Governor SEYBOLD. We haven't the funds to build shark nets. We do have swimming pools.

Mr. HAND. How many pools do you have there, General?

Governor SEYBOLD. There are 3 pools on the Pacific side and 2 on the Atlantic. Balboa, Pedro Miguel and Balboa, on the Pacific side.

The one at the Washington is no longer there, because that is included in the lease of the Washington Hotel.

Mr. HAND. Is it less expensive to build pools than it is to build shark nets?

Governor SEYBOLD. It is not comparable. I wouldn't know. We have never made an estimate of it. I don't think either one would serve the same purpose.

EDUCATIONAL FACILITIES

Mr. HAND. Now, reference is made to the detriment caused by educational facilities which are not too comparable, although in this instance, the employees, even the present employees, think it compares favorably with the States. What is wrong, if anything, with the educational facilities in the zone, General?

Governor SEYBOLD. In the grades and secondary schools, I would say that our only problem there is the introduction of the new methods of visual teaching, which require auditoriums, and also screens and so on, which we haven't been able to afford and which would be of assistance as soon as we get the auditorium built which is, of course, in the planning budget for 1955.

Mr. HAND. Your planning budget includes that auditorium which is now lacking, is that right?

Governor SEYBOLD. That is right.

Now, then, in the secondary schools, of course, the scope is somewhat limited and in the junior colleges, there, of course, we can't even equal the average junior college which any average town would have, and I again go back to my little town of Topeka, Kans., which has the most excellent, I would say, junior college in that area, which would be available, and I think that that is again coming more to the front throughout the United States.

Mr. HAND. What tuition do you charge in the junior colleges?

Governor SEYBOLD. $50 for the employees.

Mr. HAND. So the first 2 years of college education in Panama costs $100?

Governor SEYBOLD. If he is willing to take that type; yes, sir. May I add to that that there are, of course, other costs involved. That is just the tuition cost, and we have the usual fees that go along with any courses which are added to that.

Mr. HAND. Such as laboratory fees, and textbook expenses?

Governor SEYBOLD. Yes, and laboratory fees and the usual fees for athletics and so forth.

Mr. HAND. Do you have a kindergarten in your elementary schools, General?

Governor SEYBOLD. Yes, sir. It is not a prerequisite, however, for the first grade.

TROPICAL DISEASES

Mr. HAND. Do your actual hospital records in Panama show the additional prevalence of the skin diseases and other parasite diseases and allergies referred to at page 26 of the report?

Governor SEYBOLD. Yes, sir. I think I could make proper statement that most of us feel the effects of that.

Mr. HAND. Does the report attempt to go into the other side of the question and indicate the additional prevalence of other types of diseases in the continental United States, as compared with Panama?

Governor SEYBOLD. Well, I don't think it does, because I think it was just assumed and maybe properly so, that that is not the case.

Mr. HAND. General, would you insert at this point in the record, at your earliest convenience, a statement showing the extent to which patients in hospitals in the zone are actually there with the so-called tropical diseases, some of which are referred to at page 26 of the report?

Governor SEYBOLD. Just in the hospitals, and not the outpatients?

Mr. HAND. Yes.

Governor SEYBOLD. Do you mean to include the clinics, too?

Mr. HAND. Separate the hospitals and the clinics.

Governor SEYBOLD. Yes, sir.

(The information requested follows:)

The following table shows for fiscal year 1953 the number of inpatients treated at Gorgas and Colon Hospitals for the general categories of conditions indicated as well as an estimate of the percentage of outpatient visits at Pacific side clinics for the same conditions. In arriving at the estimate of outpatient visits a total of 115,000 records of visits were sampled, of which 101,775 visits were for the 6 categories of conditions indicated. The 101,775 visits covering these 6 categories constitute 57 percent of the total of 179,000 visits in all outpatient clinics on the Pacific side. Comparable data are not readily accessible for a sampling of Atlantic side outpatient clinic records, but professional opinion in the Canal Zone is that the 91,000 records on the Atlantic side would show the same 57 percent to 60 percent incidence.

Category	Outpatients percentage of 115,000 records	Inpatients number of discharges
	Percent	
1. Amoebiasis and other parasitism	18	951
2. Drug reactions	2	12
3. Allergy	7	181
4. Upper respiratory infections, common colds and pneumonia	38	848
5. Dermatological conditions	7½	189
6. Obstetrical and gynecological	16	126
Total		[1] 2,307

[1] 24 percent of 9,662 inpatient discharges checked.

Mr. HAND. Is there any merit to the suggestion in the report that people in the zone change clothes oftener, and therefore, wear them out faster?

Governor SEYBOLD. Yes, sir.

Mr. HAND. Do you think the wearing them out is caused by changing them oftener?

Governor SEYBOLD. Well, you have to change them oftener because you can't live in them.

Mr. HAND. Does that wear them out?

Governor SEYBOLD. The laundry is the thing that does the wearing.

Mr. HAND. It is all laundered?

Governor SEYBOLD. Oh, yes, we wash everything.

Mr. HAND. The clothes are bought at a fraction of the cost of woolen clothing purchased in the United States.

Governor SEYBOLD. We have tried that.

Mr. HAND. A seersucker suit doesn't cost as much as a woolen suit, does it?

Governor SEYBOLD. No, sir, but it wears out much faster.

HOME OWNERSHIP

Mr. HAND. Now, General, a suggestion is made here in this report about the connected cost of home ownership, which is on page 32. The suggestion is made that because the employee necessarily is a renter, that his housing actually costs him more money because, in the first place, it says he knows he must be a lifetime renter. Secondly, because he has to save enough money to buy a house eventually, which may or may not be so. Many people don't buy houses and many find it actually cheaper to rent them. Do you have any comment to make on that?

Governor SEYBOLD. That report, of course, refers to the fact that the employee cannot buy on the Canal Zone. He could, of course, possibly buy up here while he is working down there, but if he did that, he would be subject to this extra charge. As to the relative merits of purchase and rent, I have been in the unfortunate position through these past years of actually having to buy because I couldn't rent. Now, I know the reasoning behind that is that the real estate people were making capital of the shortage of housing, but that was actually so.

This is an element which has a definite impact on the employees, and I would like to have the comptroller speak to this point for a moment or so.

Mr. HAND. We would be glad to hear from him.

Mr. NOBLE. I have no idea what percentage of the employees would own homes if they could. Certainly, in the country at large, that is increasing. There is more and more home ownership as against rental. It is certainly a substantial factor.

In other words, there are a great many, I am sure, who feel they must have a home to which they can retire in their old age. They resent the fact that they are having to pay depreciation on the house they are living in and interest on the investment.

Mr. HAND. Do you mean as rent?

Mr. NOBLE. That is correct. That it goes down the drain. As an accountant, I am trying to show them it is the same difference. If they bought the house, it would depreciate the same.

Mr. HAND. It is the same with every renter, no matter where he is located.

Mr. NOBLE. That is what they all do, but they look at these homes where you can, by making monthly payments, amortize the mortgage, and in 20 years own the house. Here, after 20 years, they have to begin looking around for a new home when they leave the zone.

Mr. HAND. Do they pay any real or personal tax in connection with this home ownership?

Mr. NOBLE. No, they do not.

Mr. HAND. Do they pay any cost of maintenance of the house?

Mr. NOBLE. Yes, the full cost of maintenance is in the house and it is about double what normal maintenance cost is in the States.

Mr. HAND. Again, that is in the rent?

Mr. NOBLE. That is in the rent, and a very substantial factor. About 42 percent of the rent is for maintenance. The normal rate is supposed to be 20 percent, as I understand it.

Mr. HAND. Other than rent he pays nothing, of course. He doesn't make any other direct payments for his house except rent?

Mr. NOBLE. That's correct. He pays electricity and for his electric range and he must buy his own refrigerator.

Mr. HAND. I have observed in the report that the cost of a telephone for example is about half the cost in the continental United States.

Is there a similar difference in electric charges, there?

Mr. NOBLE. The electric charges are substantially greater down there, although the unit rate is lower. The consumption—and I can speak for my own case—consumption of electricity is much higher.

My electric bills on the isthmus are about equal to what I paid in Washington to heat the house and light it, and the gas for cooking. That is because we have to run dry closets, 24 hours a day, 7 days a week, which are constantly consuming current. We have a great deal more washing and our water must be heated by electricity, and our refrigeration takes more electricity because of the higher average temperature.

My electric bill runs about $16 to $18 a month, all year round.

Mr. HAND. Except for the dry closet, which undoubtedly is a factor, everything else is a normal use of electric current, isn't it?

Mr. NOBLE. Except that our laundry is a great deal heavier. We do more washing of clothes than in the United States

The automatic washers take a great deal of hot water.

Mr. HAND. Now, in the report on housing costs as made by your consultants, they have a unit of a Canal Zone price, of gas and electricity, of 4.00, and a United States price of 6.97. That refers to the cost of current, itself, and has nothing to do with the consumption of it, I suppose?

Mr. NOBLE. I can't explain that, Mr. Chairman. I don't know what the answer to that is. It seems to me, though, that it is an understatement of the Canal Zone cost. If it purports to be the cost total, it is an understatement, for that I can vouch.

COST OF VACATIONS

Mr. HAND. Now, this statement is made in the report on page 34, speaking about the connected cost of vacations, which speaks of the extra cost of getting back to the States.

Did you say that per person that was $80 a round trip, generally, the other day?

Governor SEYBOLD. Yes, that's right.

Mr. HAND. Does that same rate apply to children?

Governor SEYBOLD. Under 12.

Mr. HAND. To what is that rate reduced?

Governor SEYBOLD. It is 50 percent, I think.

Now, in addition to that cost which is involved, the statement is made:

> The amount of extra vacation cost does not show up in the present expenditure patterns of some employees. The reason given for this in home and executive interviews is that employers no longer take stateside vacations on the prescribed biennial schedule because they don't have the money.

What has become of the money? If they used to take vacations, why don't they still take them?

Governor SEYBOLD. The costs are too high for them.

Mr. HAND. Costs haven't increased, have they?

Governor SEYBOLD. Not the cost on the steamship line, particularly, except that in order to take a vacation up here, I think you can realize that generally they bring their car and that costs them $90 each way. There are no rates on that. However, the costs of vacations here for a family certainly have increased. It is actually the fact that they can't afford them.

Mr. HAND. Their pay has been increased, too, has it not? Three times in the last few years.

Governor SEYBOLD. Of course the pay has been increased, as the increase in pay has come in the States because that is the base, but they haven't had any more disposable pay for vacations.

COST OF COLLEGE EDUCATION

Mr. HAND. Now, is this part of the report entirely fair, General, in trying to get at the facts, which is what we are all doing:

> Zone employees' children have to go to the States for the last 2 years of college. This involves 2 items of connected cost, 2 round-trip fares and in some cases extra tuition. Prorated over a period of 20 years this is estimated to amount to about $48 annually for each child.

Is any consideration given to the fact that the first 2 years of college are furnished for a cost of $50 apiece, plus a few incidentals? Is that reflected in this extra cost of education?

Governor SEYBOLD. The person who sends his child to the United States for a college education does not utilize the local junior college for the first 2 years, as the course is not aimed toward technical or professional careers, but general, overall arts. In the course, there, he would lose probably a half a year or maybe more, because we can't have the overall course necessary in a small group.

Mr. HAND. That is the general, overall figure, and to that extent the report is hardly factual, is it?

Governor SEYBOLD. I would say for those who send their children to the States for their final college education, this is about right.

Mr. HAND. Those who do.

Governor SEYBOLD. Those who leave off the educational years, and take just 2 years at junior college, of course that isn't so.

REDUCTION IN RENTALS

Mr. HAND. Now, on the question of rentals, General, the report indicates that until 1922 the rentals were entirely free and at that time nominal rentals were introduced. As a result of action by you, pur-

suant to suggestions from the committee, there has been a new table of rentals which this report now indicates should be reduced by a flat reduction of 50 percent.

In your judgment are the present rentals subject to being reduced by a flat reduction of 50 percent?

Governor SEYBOLD. This method of a benefit to the employee is not one which the management of the board has approached in that manner. There are certain elements of the way in which the rent is now set which we feel is not entirely proper. There are, first, the excess charges of maintenance. There is the interest charge which is placed on the housing which in one manner can be thought of as a profit to the United States. The United States Government has not provided the funds for this housing, and in charging interest, it is getting a return of interest for money it has not put out. If you consider the United States and the individual, that is so.

There is also the matter of whether or not there is a proper element of cost that is placed in the divisional and general corporate overhead, that suggests a change and a reduction.

That would be the way—the board and management looked upon that, as a matter of fact, as a specific 50 percent reduction in rent as a flat cut—we don't believe that is a proper approach.

Mr. HAND. Will you put in the record, General, a brief statement showing the type of housing that is owned by you down there, and the rents on that type of housing, and some comparison of the tvpe and the rentals charged in the continental United States, generally?

Governor SEYBOLD. That would require quite a bit of research and study. The comparability factor is one in which we have had difficulty.

Mr. HAND. Suppose you list the types of houses available and the rents charged under your present schedule. Just types. Not the whole number, of course.

(The information requested follows:)

The following is a table showing rentals on representative types of housing for United States-rate employees in the Canal Zone.

Number of apartments per building	Description	Monthly rent	Number of apartments per building	Description	Monthly rent
1	4 bedrooms	$93.17	2	2 bedrooms	$68.47
1	2 bedrooms	86.02	2	do	56.12
2	3 bedrooms	84.28	4	3 bedrooms	50.70
2	do	77.57	2	2 bedrooms	48.75
1	do	73.88	4	do	45.50
2	do	72.58	4	do	42.47
1	do	71.50	4	1 bedroom	35.75
2	2 bedrooms	71.07	12	do	21.67
1	do	70.85			

Rents are for shelter only and do not include furniture, electric current, cooking stoves, or telephone service.

COST OF LIVING COMPARISON

Mr. HAND. In the cost of living comparison furnished by this report, on appendix E–7, housing costs are compared as follows: Canal Zone price—which I take it to be some median average, and United States price of 495. Can you tell us how they got the figure of $495 annually for rentals in the continental United States?

Governor SEYBOLD. I think that we can give you the method in which the report arrived at that figure.

Mr. HAND. Do you agree with it, General?

Governor SEYBOLD. I must say I don't understand how they arrived at appendix E, personally, or what it pretends to prove. It intended to prove a thing that I believe in. The method in which they have the Bureau of Labor Statistics—with which again, I am not fully familiar—the computed weighting and the price index and the weighted item, I have only a vague idea of how they were arrived at. I am fully convinced, however, that the cost of living as you and I understand the term, and as we kind of budget it, in the Canal and the States, is similar.

Now, the comptroller, I think, can answer your specific question as to how they arrived at that, better than I.

Mr. NOBLE. We asked Booz, Allen & Hamilton how they arrived at the figure. They explain in their report the method by which they arrived at that United States rental figure, but we were interested in the specific calculation, and I have here some details on it, if you would like to have them.

Mr. HAND. Will you furnish it for the record, Mr. Comptroller?

(The information requested is as follows:)

STATEMENT REGARDING COMPUTATION OF COMPARATIVE COSTS OF HOUSING—PANAMA CANAL ZONE AND UNITED STATES

The question has to do with the statement, appearing on page 30 of volume I of a report on Survey of Extra Compensation for Panama Canal Company, that the cost of housing in the zone is 19.6 percent higher than the cost of housing in the United States.

The figure represents the weighted price index relationship between United States and Canal Zone prices for the 15 housing items selected for inclusion in the Consumer Price Index calculation, taken as a group (appendix E, volume II of the cited report). The calculations were made in accordance with accepted statistical methods for constructing a price index based upon both dollar prices and price relatives.

Details of the calculations are as follows: Fifteen items were chosen to comprise the category of housing. The items are listed on pages 7–9 of appendix E.

Each item carries a weighting assigned to it by the Bureau of Labor Statistics and is based on consumer expenditures in December 1952 in selected cities of the United States. These weightings are listed in the first column opposite each housing item, entitled "BLS Revised Index Weighting."

The total of the BLS weightings of the 15 items is 13.13 which represents a weighting of 32.2 in the United States Consumer Price Index. Applying this relationship, an imputed weighting was calculated for each housing item. These are shown in the column headed "B. A. & H. Imputed Weighting."

The price relative for each housing item was calculated from Canal Zone and United States prices. The individual prices and price relatives are listed under the next three headings on the page.

Each item in the item price index column was multiplied by its counterpart in the B. A. & H. imputed weighting column and divided by 100. This resulted in the weighted item price index shown in the last column on the page.

The total of housing items in the weighted item price index column divided by the total of housing items in the B. A. & H. imputed weighting column indicates the percentage relationship between total housing costs in the United States and those in the Canal Zone. This calculation results in the 19.6 percent figure appearing in the report.

Mr. HAND. It indicates housing costs 19.6 percent more in the States for rent. Would you explain that?

Mr. NOBLE. It is based on the relation between those 2 figures, I believe, 891 to 495.

Mr. CEDERBERG. Governor, it would indicate from the questioning of my colleague, Mr. Hand, and the replies which you have made, that life in the Panama Canal isn't all that it is supposed to be.

RECRUITMENT PROGRAM

As I understand that in filling some of the positions that may become vacant due to retirement, voluntary leaving, and so forth, you have a recruitment program. Is that correct?

Governor SEYBOLD. That's correct.

Mr. CEDERBERG. Would you advise us of just what that consists?

Governor SEYBOLD. Well, it is a constant recruiting that goes on. It isn't a specific program. We requisition on the Washington office and they circularize the area for—I mean we requisition for the needed people. Now, this is the normal average position. I am not talking about the executive and the highly technical position.

Then they send teams out throughout various areas and conduct interviews, they advertise, and so on.

For the executive positions, that is handled generally by the executive group who canvass all areas, civil service, and we have a number of various outlets that appear in the various other agencies, and the Board of Directors are constantly becoming aware of the specific executive positions that we need. Likewise, the Health Bureau—General Longfellow conducted a personal campaign through various doctors' associations, medical associations and that, for that type. Each classification is handled sometimes within its own area.

We are short and have been short, of course, throughout the whole gamut of the medical, nursing, and that area. We have extreme difficulty in filling our technical positions and professional, you might say, positions.

In the area of skills, we are short, generally, electricians and groups like blacksmiths and so on. Some of that, of course, are groups of skills which are short in the United States.

Mr. CEDERBERG. Do you have available something that might be inserted in the record, or can you get for us a circular or some of the advertising you provide to a prospective applicant for a position in the Canal Zone?

Governor SEYBOLD. Yes, sir.

Mr. CEDERBERG. Would you furnish it to the committee?

Governor SEYBOLD. Yes.

(The information requested was supplied to the committee.)

Mr. CEDERBERG. I may be assuming something that I have no right to assume, but it seems to me that when we are out on recruitment program, sometimes, we paint a very glowing picture of the Panama Canal—"Please come down and join our force, life here is much better than it is back home"—and you give a very much different picture than we have had presented here, today, and I just wondered if we could get the other side of the picture.

Governor SEYBOLD. Of course you realize, Mr. Congressman, that management must protect itself and it must operate its canal.

Mr. CEDERBERG. It will be quite interesting to see what type of an approach you give the prospective employee.

Governor SEYBOLD. That's correct. Of course, that is one view of management as contrasted to a report which is basically employee.

Mr. CEDERBERG. In other words, there is a difference?

Governor SEYBOLD. I wouldn't say that, sir.

Mr. CEDERBERG. It will be quite interesting to read the report to see what is involved.

TAXES OF EMPLOYEES

There is one other matter that has been brought to the attention of the committee through the report and that is the one regarding fringe benefits.

Would you advise the committee something about the taxes paid by the employee in the zone, other than Federal income tax, if any?

Governor SEYBOLD. He, like all other Government employees overseas, does not pay any taxes, except Federal income tax.

Mr. CEDERBERG. He pays no sales tax of any type?

Governor SEYBOLD. I think that is common policy of Government employment.

Mr. CEDERBERG. It is not entirely a policy of Government employment. In other words, employees of the Federal Government pay the District of Columbia sales tax.

You mean overseas employees?

Governor SEYBOLD. Oh, yes.

Mr. CEDERBERG. What is the comparison between the retirement benefits of Canal Zone employees and the stateside civil-service employees.

Mr. WHITMAN. The Civil Service Retirement Act applies, generally, to employees of the Government in the United States and applies, also, to the employees of the Panama Canal Company and the Canal Zone government.

Mr. CEDERBERG. Twenty-five percent differential is computed in considering retirement for the Canal Zone employees?

Mr. WHITMAN. That's correct.

Mr. CEDERBERG. Would you also advise us with regard to the difference between leave between stateside and canal employees?

(The matter referred to follows:)

LEAVE PROVISIONS

PANAMA CANAL COMPANY EMPLOYEES

Forty and one-half days per year. Maximum accumulation, 90 days. Five days travel time per year.

STATESIDE EMPLOYEES

Less than 3 years service, 13 days per year; 3 to 15 years, 20 days per year; over 15 years, 26 days per year. Maximum accumulation, 30 days. Thirteen days per year sick leave, unlimited accrual.

Mr. CEDERBERG. Would you advise us as to the differential of the rentals of employees within different governmental agencies within the zone?

(The information requested is as follows:)

Cross section of rental rates for Armed Forces housing in the Canal Zone

Permanent quarters, United States rate:	
1 bedroom	$25.50
2 bedrooms	49.50
Do	58.00
Do	63.50
3 bedrooms	71.00

Temporary quarters, United States rate:	
1 bedroom	$15.00
Do	20.00
2 bedrooms	25.00
Do	27.50
1 bedroom	30.00
2 bedrooms	32.00
3 bedrooms	32.50
Do	38.00
2 bedrooms	42.00
3 bedrooms	62.00

TWENTY-FIVE PERCENT DIFFERENTIAL

Mr. WHITMAN. The 25-percent differential is paid throughout the Canal Zone by all agencies.

Mr. CEDERBERG. Of course employees of the Army and the Navy, they have access to the Army commissaries and PX's—particularly the commissaries, I believe. They are priced below our commissaries.

The other fringe benefits of the employees of the Army I'm not too familiar with. Their rents are, I think by statute or agreement, are based on Panama Canal rates.

From that I would assume that the Defense Department employees do not pay the same rents as the Panama Canal Company employees.

Governor SEYBOLD. I think they work on the basis of A45, and comparability with Panama.

Mr. CEDERBERG. Aren't they supposed to be the same?

Mr. WHITMAN. Under the appropriations act a year or so ago, enacting into law Budget Bureau Circular A45, there is comparability within the Canal Zone.

Mr. CEDERBERG. Are they the same? Do you have any knowledge?

Governor SEYBOLD. No.

Mr. CEDERBERG. Would you provide for the record a comparison of the hospitalization and medical care between your employees and others in the Canal Zone?

Governor SEYBOLD. Yes.

Mr. CEDERBERG. And also a comparison of the education, including kindergarten and junior college availability?

Governor SEYBOLD. Yes, sir.

(The information requested is as follows:)

Hospitals

	Hospitalization, basic charge	Operations and extras	Out-patient calls
Company or Government	$1 to $6 per day [1]	10- to 60-percent tariff [1]	50 cents to $2 per visit.[1]
Military (in uniform)	$18.75 per day, all inclusive.		$4 per visit.
Military dependents.	$8 per day	60-percent tariff	$3 to $5 per visit.
Civilian employees			
Civilian employees' dependents.			
General public, non-Government and foreign patients.	$10 per day	Tariff	$5 per visit.

[1] Depends on salary of head of family.

Schools (white)

	Kindergarten	Grades 1 to 6	Grades 7 to 12	Junior college
Company or Government.	Free (paid by Canal Zone Government).	Free (paid by Canal Zone Government).	Free (paid by Canal Zone Government).	$50 per year (paid by family).
U. S. Government agency (sponsored).	Agency does not sponsor.	$265 per year (paid by agency).	$390 (paid by agency).	Agency does not sponsor.
U. S. Government agency (not sponsored).	$72 per year (paid by family).	See above (paid by agency).	See above (paid by agency).	$50 per year (paid by family).
All others	$135 per year (paid by family).	$135 per year (paid by family).	$180 per year (paid by family).	$225 per year (paid by family).

Mr. CEDERBERG. What was the date in which the 25 percent went into effect? The overall additional.

Mr. WHITMAN. In the early construction days there was a larger differential.

Mr. CEDERBERG. Larger than 25 percent?

Mr. WHITMAN. Yes, sir. By the act of 1912—I can't recall the precise date—the differential was limited to not to exceed 25 percent over stateside rates.

Mr. CEDERBERG. What was the date it was reduced?

Mr. WHITMAN. Approximately 1912.

Mr. CEDERBERG. Is it reasonable to assume that conditions have greatly improved, as far as living conditions, educational opportunities and recreational opportunities, since 1912?

Governor SEYBOLD. Likewise, by comparison. I think they have improved. By the comparable factor with the United States, they have improved.

Mr. CEDERBERG. I'm not ready to assume that our situation in the United States, in 1912, was comparable to that in the Canal Zone in 1912.

Governor SEYBOLD. That would be true; yes.

Mr. CEDERBERG. The original reason for this 25 percent differential was because of living conditions imposed upon people going into the Canal Zone, is that correct?

Governor SEYBOLD. Well, not only living conditions, Mr. Congressman, but all the other effects which have been brought out.

Mr. CEDERBERG. I can appreciate it, including the fact that you have to leave the States, and so forth.

Governor SEYBOLD. That's right.

Mr. CEDERBERG. If a man went to the Panama Canal, with his wife, and raised a family, and those children came of working age and became employed in the Panama Canal Zone, they would also receive the 25 percent differential.

Governor SEYBOLD. Yes. May I speak to that point?

Mr. CEDERBERG. Yes.

Governor SEYBOLD. There is one of the things that I feel hasn't been covered well in this report, the lack of opportunity of training their children. Here, as you realize—and I think maybe a good number of people around this table, began their early career carrying papers and this and that, and so on. There are no such jobs for the young people. That is done by this other grade of labor.

To me, that is one of the great defects in this report, that they don't bring that out enough.

Now, again, you can't, Mr. Congressman, say it is worth 5 percent or 2 percent or something, but it is a tangible thing which is in the minds of the parents, I know, as they talk about it.

The limitation of opportunity is one of the great things; that is just factual.

Mr. CEDERBERG. I can appreciate that there is something in that.

Mr. RABAUT. I did not see this report until this afternoon and I have only had a chance to look at it casually. I realize there is some consideration here for human elements in this report that appeal to me.

On page 16, speaking about complaints it says:

> Some were legitimate, some seemed just gripes. A common thread ran through all of them, continual frustration and annoyance at not being able to exercise, in little ways and big ones, the traditional American prerogative of independent choice.

Now, that really affects anyone, anywhere. I think it is a very sound statement.

Governor SEYBOLD. May I add, Mr. Congressman, that that is one of the things that the management must translate into either benefits, or pay, to offset. You can't say the extent and true value is 5 percent or 2 percent.

MEDICAL CARE

Mr. RABAUT. The report here on page 18 under the heading "Medical Care" saids this:

> Five out of every six present employees believe that medical care and hospital services in the zone are not as good as those in the States. The opposite opinion is held by 12 out of 13 retired employees, and by 8 out of 11 employees who have resigned in the past 2 years.

I mention that to show that the report seems quite fair.

> Current conditions, mostly of recent origin, substantially support the present employee's view.

Now, do you know at the bottom of page 19 it says:

> The alloted force of Canal Zone doctors is 61. In 1953, there were 18 resignations, as well as exposing the patient to even less privilege is choosing its doctor than is normal under the zone's system of socialized medicine, this high turnover continually causes temporary shortages in one service or another.

It goes on to say:

> Recently, for instance, elective surgery was stopped for 2 weeks and only emergency cases were handled. It has not been uncommon for a pregnant woman to be examined by a different doctor on each prenatal visit and to have her child delivered by a doctor who has not previously seen her.

Now, just talking about it: there is one certified ophthalmologist on the staff. He shuttles between Balboa and Colon, handling all serious eye cases.

Everything in the report isn't to be discredited, by any means.

Governor SEYBOLD. I think the report was trying to create that atmosphere, which is so difficult to explain. In the minds of most people, we are trying to balance the pay between here and there, and forgetting the conditions which surround it. You have to pay, Mr. Congressman, for those conditions.

Mr. RABAUT. That's right, but you have to be careful not to labor a point.

Now, speaking about the opinion of medical men and vacations:

Medical men agree that several weeks vacation in a temperate zone, at least every 2 years, is mandatory for zone employees.

They don't say one particular doctor, they say, medical men say it.

Now, after all, we have problems of our own down there. We have this zone to maintain and keep, and keep it operating.

Now, on page 66, speaking about differentials, it says:

Net earnings advantage now provided workers in the Tropics by representative employers.

Company No. 10, 73.7 percent; company 3, 65 percent; company No. 7, 48.7; Department of State, 47.8; United States Army, 27.8 percent, and the Panama Canal Company, 22.7 percent.

It is at the bottom of the whole list. Then on page 67 there is the recommended program that we talked about this morning.

Now, there is an item here on page 68 about the retaining of the 25-percent differential:

Although some private companies go higher, a 25 percent differential is the standard practice of most employers operating in the Tropics. And based on questionnaire responses from employees and ex-employees, a 25 percent differential is considered satisfactory and fair.

On page 69:

Most employees interviewed during this survey are reconciled to paying taxes on their base pay. They recognize some justice in that, but they deeply resent the Government's holding out an inducement for overseas service with one hand and directly, or indirectly, taking large slices of it back with the other.

On page 70:

The Federal income tax on the worker's full income has been a principal reason why so many zone employees have quit their jobs recently and is a principal reason why zone job offers are being turned down today.

Now, those are just a few things which I noticed in looking through this book this afternoon.

NUMBER OF EMPLOYEES

Mr. RILEY. How many Americans are now employed at the Panama Canal and by the Panama Company?

Governor SEYBOLD. We have 2,676 United States grade people in the Company on the zone. There are 513 on the United States, which, of course, are not in on this, and the Government, who were the same, have 1,183, so that the total of the Company government on the zone, which I think the Congressman is interested in, is 3,859. That is the record as of December 31, 1953.

Mr. RILEY. Do you have any figures as to the total population of Americans?

Governor SEYBOLD. I haven't the population figures. I can furnish them.

Mr. RILEY. If you don't have them, I would be interested in having you furnish them for the record.

Governor SEYBOLD. The population of the zone we have for 1952.

(The information requested is as follows:)

The number of United States citizens employed by the Panama Canal Company and Canal Zone Government in the Canal Zone, and their families, is approximately 10,000.

WAGE SCALE

Mr. RILEY. All of these employees get the usual increase for promotions the civil service entitles them to?

Governor SEYBOLD. Except the wage board group.

Mr. WHITMAN. If they are classified within the Classification Act.

Governor SEYBOLD. The majority of our people are not under the Classification Act. They are generally under the wage board scales. That is where the bulk of the employees are.

Mr. RILEY. Under the wage board scale?

Governor SEYBOLD. Yes, sir. Those are scales which are set by comparative rates with, for example, the Washington Navy Yard. We also have a group whose wages are set by statute, the police and the firemen. Pilots, of course, they are not included in the 25 percent group. Their wages are set without reference to the 25 percent.

The administrative group personnel employees are around 550. Total wage board employees, around 1,400. The general service employees around 1,600 and CPC, around 120.

We utilize as pay, the navy yard schedules, the floating equipment schedules, which is derived from the Corps of Engineers. Likewise the power branch schedule and then the railroad operators are taken from the railroad schedules of the States.

Mr. RILEY. You might say, generally, the basic salaries are comparable to services of like nature in the United States, plus the 25 percent increase?

Governor SEYBOLD. That's correct, except I would say in some instances the pay scale average utilized might be under that pay scale in many portions of the United States.

Mr. RILEY. The wage board here in Washington sets those scales?

Mr. WHITMAN. Our wage board rates are fixed by the Government with the advice of the wage board there, which in turn are based on an average of certain navy yard and other wage board rates in the United States.

Mr. RILEY. But, you have a local wage board.

Mr. WHITMAN. Yes, sir.

Governor SEYBOLD. Generally speaking, I think your conception is correct.

RECRUITMENT OF NEW EMPLOYEES

Mr. RILEY. What method do you use to recruit new employees Do you come to the employment agencies, do you advertise in papers, or just what methods do you use?

Governor SEYBOLD. Do you want to answer that, Mr. Whitman?

Mr. WHITMAN. We recruit through the Civil Service Commission for all positions for which they provide that service and in addition, the various areas in the United States on which there are employees of the type for which we are looking, they are circularized by the United States Employment Service.

The various divisions of the canal that are operating on specialized lines have their own sources for recruiting within the professions, or occupations in which they are particularly interested in the United States, by contact with others in that field, up here.

Mr. RILEY. Civil service sends out circulars, that's true.

Governor SEYBOLD. We have recruiting parties out through various areas where we have been successful in finding the type of employee that we are currently in need of. I think some of those parties went down in your part of the country, Mr. Riley.

Mr. RILEY. I am familiar with that.

Do you circularize the electrical and mechanical schools?

Governor SEYBOLD. We have been recently to get the professional class.

Mr. RILEY. Then you go into the industrial areas to get the industrial workers and men with experience?

Governor SEYBOLD. Yes.

Mr. CEDERBERG. Governor, I might say we have enjoyed the opportunity to discuss this report with you, and most certainly this report is no different than any other report. There are controversial items in it.

I might also say that this concludes our hearings on the Panama Canal. We have enjoyed the opportunity to see you again this year and to have your staff up here with us. We will look forward to seeing you again and hope maybe we'll have the opportunity to visit you in Panama and look over some of these problems which are of vital concern to all of us. I think we only want to be fair, we want to do what is right and we are glad to have this report and have an opportunity to talk to you about it.

Governor SEYBOLD. I am sure on the part of the management of the canal and the Board of Directors, we feel the same and we certainly issue an invitation to the committee and to its clerk, if I may say, to come down and see us.

We realize that there are problems ahead of us and particularly problems in this labor category which are not easily solved because they are labor personnel problems and they cannot be particularly written down on a ledger.

I do appreciate the approach which the committee has made, and I think that we are all of the same ultimate thing and I would thank you.

APPENDIX

(The following table refers to information requested on p. 133.)

Status of Corps of Engineers funds—Transferred to U. S. Weather Bureau for precipitation studies (as of Dec. 31, 1953)

Item	Carry-over from 1953	1954 transfer	Total funds available	Expend-itures to Dec. 31	Obliga-tions to Dec. 31	Unex-pended balance	Unobli-gated balance
Hydroclimatic network:							
GI	$5,225	$148,307	$153,532	$85,244	$94,362	$68,288	$59,170
Construction, general	21,922	85,565	107,487	42,892	42,969	64,595	64,518
Operation and maintenance, general	25,423	99,128	124,551	49,743	49,831	74,808	74,720
Mississippi River	1,293	5,000	6,293	2,529	2,533	3,764	3,760
Total	53,863	338,000	391,863	180,408	189,695	211,455	202,168
Hydrometeorological studies: GI	11,988	93,000	104,988	41,497	45,399	63,491	59,589
Reporting networks: Operation and maintenance, general	37,380	82,413	119,793	[1] 44,638	41,124	75,155	78,669
Gross, total	103,231	513,413	616,644	266,543	276,218	350,101	340,426
Summary of above programs:							
GI	17,213	241,307	258,520	126,741	139,761	131,779	118,759
Construction, general	21,922	85,565	107,487	42,892	42,969	64,595	64,518
Operation and maintenance, general	62,803	181,541	244,344	94,381	90,955	149,963	153,389
Mississippi River	1,293	5,000	6,293	2,529	2,533	3,764	3,760
Total	103,231	513,413	616,644	266,543	276,218	350,101	340,426

[1] Includes some 1953 expenses paid since July 1, 1953. Weather Bureau has no information presently available in Washington to correct this interim figure.

(The following information was requested on p. 197:)

Location of Coal Fields Which Could Supply Requirements of AEC and TVA

The following information is submitted to supplement information on page 511 of the manuscript of the record of hearings on the civil functions budget of the Corps of Engineers. This information concerns the project for Green River locks and dams 1 and 2, Kentucky.

The presently developed coal fields adjacent to the Madison powerplant, which will supply the energy for the Portsmouth atomic energy plant, are the southern Ohio fields, the Big Sandy field, Kentucky, the Logan field, West Virginia, the L. & M. field, Ohio, the southern Illinois fields, and the southern Indiana fields.

The southern Ohio fields produce a low-grade coal and consequently there is very little mining. The operations are too small and the quality of coal is too low to meet the needs of TVA or AEC.

Coal from the Big Sandy field, Kentucky, Logan field, West Virginia, and L. & M. field, Ohio, is classified as metallurgical coal and is of a quality superior to that required. Due to its quality, this coal is more costly than the coal from the Green River fields and in addition is more costly to transport to the Madison powerplant since it is available only through a rail-water-rail movement.

The southern Illinois fields produce coal which compares both in quality and in cost of transportation with the coal from Green River. These fields can supply coal more economically to other TVA steam plants than those proposed to be supplied from Green River, and consequently are now drawn on heavily by the TVA.

There are two fields in southern Indiana which have been considered. One field, south of Booneville, produces coal which compares both in quality and in cost of transportation with that from the Green River fields. The present supply contracts for the Madison plant call for the use of this coal along with that from Green River on a 50–50 basis.

The second field in southern Indiana is north of Booneville and somewhat remote from the river, with a higher transportation cost than that from Green River. This field is the alternate supply source to Green River and is so recog-

nized by an alternate clause in the present contract, which allows that if the Green River is not improved, the amount of coal to be obtained from Green River will be supplied from these fields at an increased cost. The benefits determined for the Green River lock reconstruction project are based on the difference in transportation costs between the Green River fields and the Madison powerplant, and between the southern Indiana fields north of Booneville and the Madison powerplant. Use of coal from these latter fields is undesirable not only from the transportation cost standpoint, but also from the standpoint of quality, since this field produces coal of an inferior quality, with a lesser B. t. u. value than the coal from the Green River fields.

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